TOSHIBA

FILE NO. 810-200338

SERVICE MANUAL

DVD VIDEO RECORDER

D-R1SB
D-R1SF
D-R1SG

December, 2003 Ⓨ

LASER BEAM CAUTION LABEL

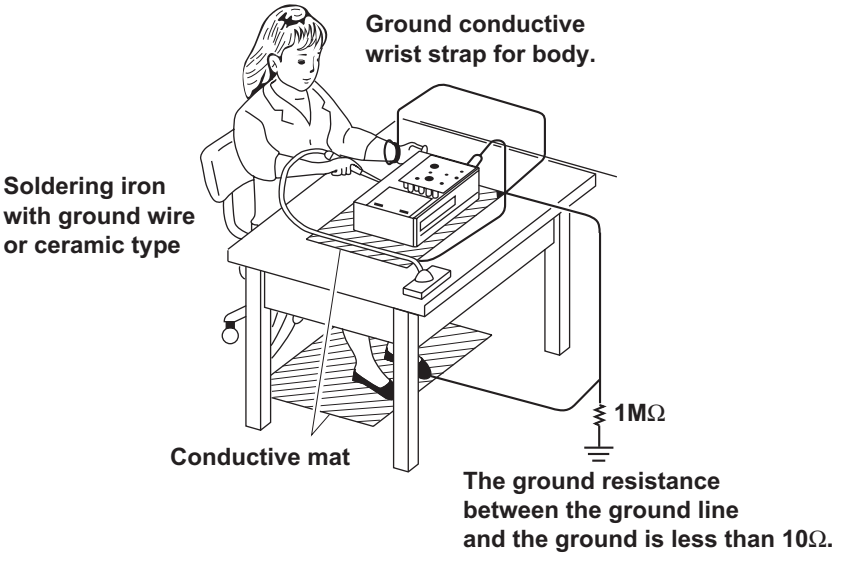
When the power supply is being turned on, you may not remove this laser beam caution label. If it removes, radiation of a laser may be received.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.



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SECTION 1
GENERAL DESCRIPTIONS

1. OPERATING INSTRUCTIONS

Please refer to the owner's manual about the contents.

2. LOCATION OF MAIN PARTS

2-1. Location of Main Parts

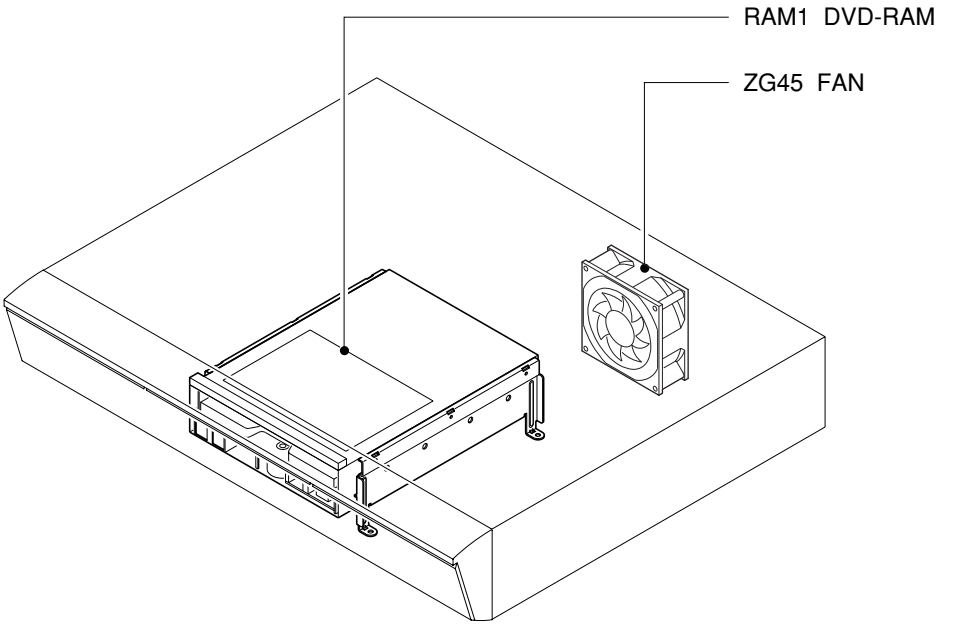


Fig. 1-2-1

2-2. Location of PC Boards

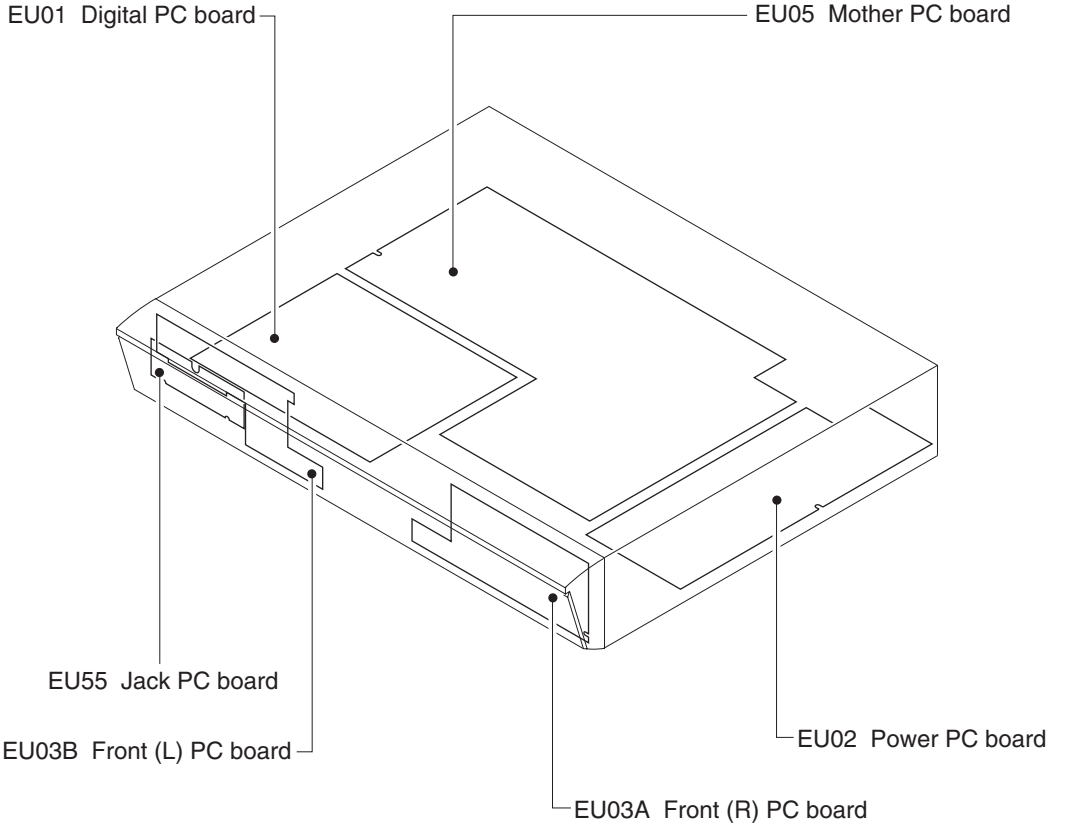


Fig. 1-2-2

SECTION 2
PART REPLACEMENT AND ADJUSTMENT PROCEDURES

CAUTIONS BEFORE STARTING PART REPLACEMENT

Electronic parts are susceptible to static electricity and may be easily damaged, so do not forget to ground as required. Many screws are used inside the unit. To prevent the screws from missing or dropping, etc. always use a magnetized screwdriver in servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

1. REPLACEMENT OF MECHANICAL PARTS

1-1. Cabinet Replacement

1-1-1. Top Cover

(1) Remove seven screws (1), and then remove the top cover (2).

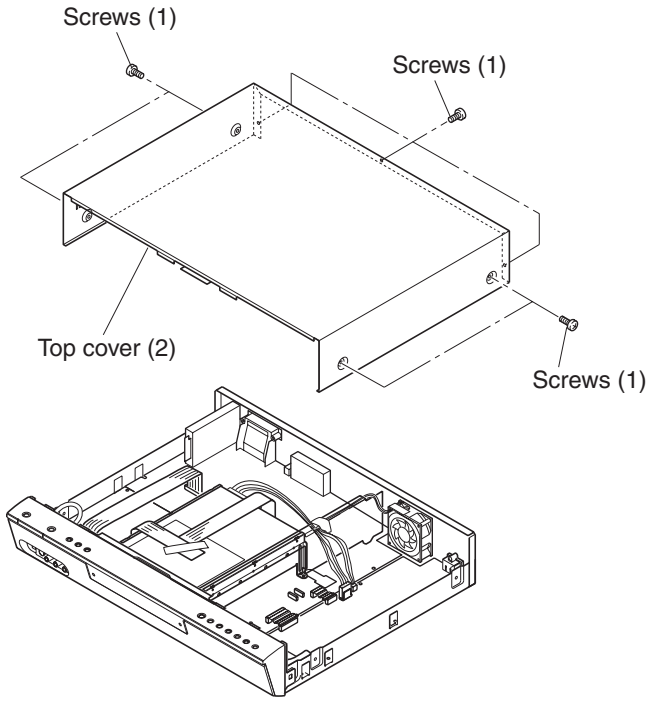


Fig. 2-1-1

1-1-2. Front Panel

(1) Remove the top cover. (Refer to item 1-1-1.)

(2) Disconnect the flexible cable (1).

(3) Disconnect the flexible cable (2) and two connectors (3).

(4) Remove two screws (4) and two ground wires (5) and (6).

(5) Remove the front panel (7).

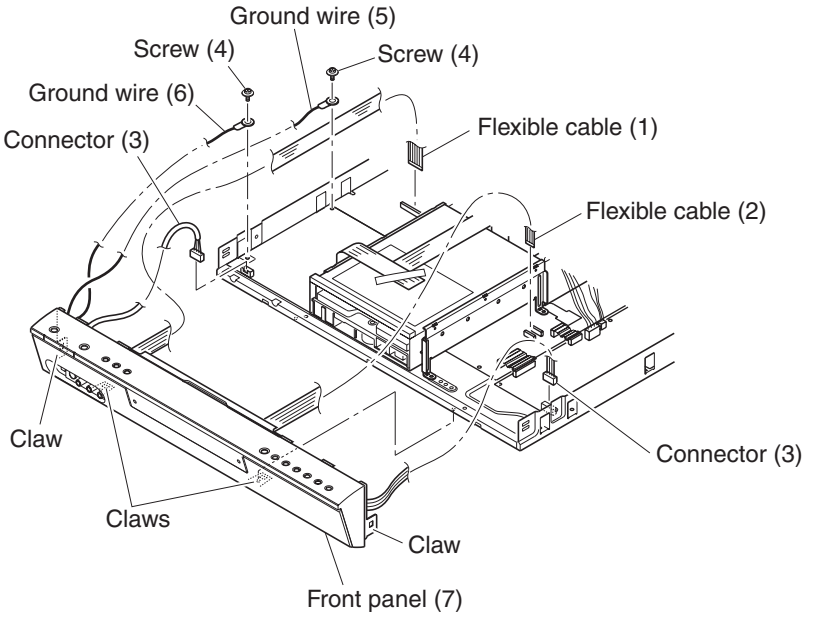


Fig. 2-1-2

1-1-3. Tray Door

(1) Remove the front panel. (Refer to item 1-1-2.)

(2) Remove the Front (R) PC board. (Refer to item 1-2-4 (2) to (4).)

(3) Remove the spring (1).

(4) Remove the tray door (2) while slightly bending it.

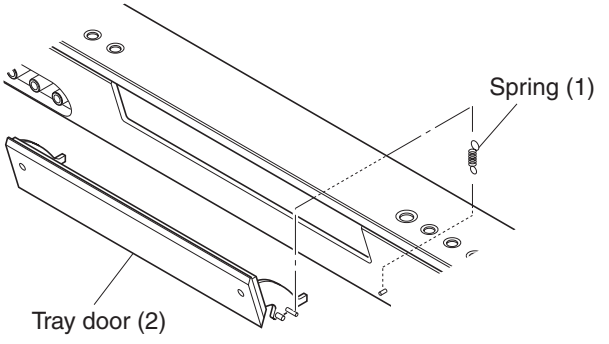


Fig. 2-1-3

1-1-4. RAM Drive

(1) Remove the top cover. (Refer to item 1-1-1.)

(2) Remove the front panel. (Refer to item 1-1-2.)

(3) Disconnect the flexible cable (1).

(4) Remove the piece of tape (2).

(5) Disconnect the connector (3).

(6) Remove two pieces of tape (4).

(7) Remove three screws (5), and then remove the acrylic board (6).

(8) Remove four screws (7), and then remove the RAM drive (8).

(Note)

After replacing, tape on three points of (2) and (4) as they were.

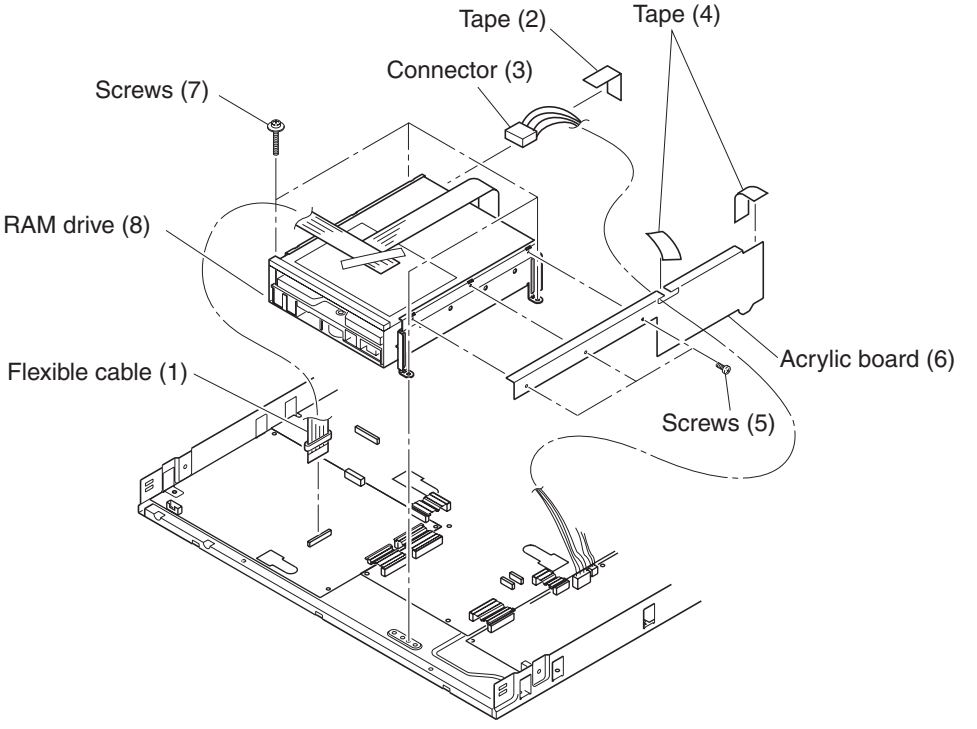


Fig. 2-1-4

1-1-5. Fan

(1) Remove the two pieces of tape (1).

(2) Cut off the binding band (2).

(3) Disconnect the connector (3).

(4) Remove four screws (4) and nuts (5) to remove the fan (6).

(Note)

- After replacing, tape on two points (1) as they were.
- Pass the wire (7) underneath the folded part of the acrylic board.

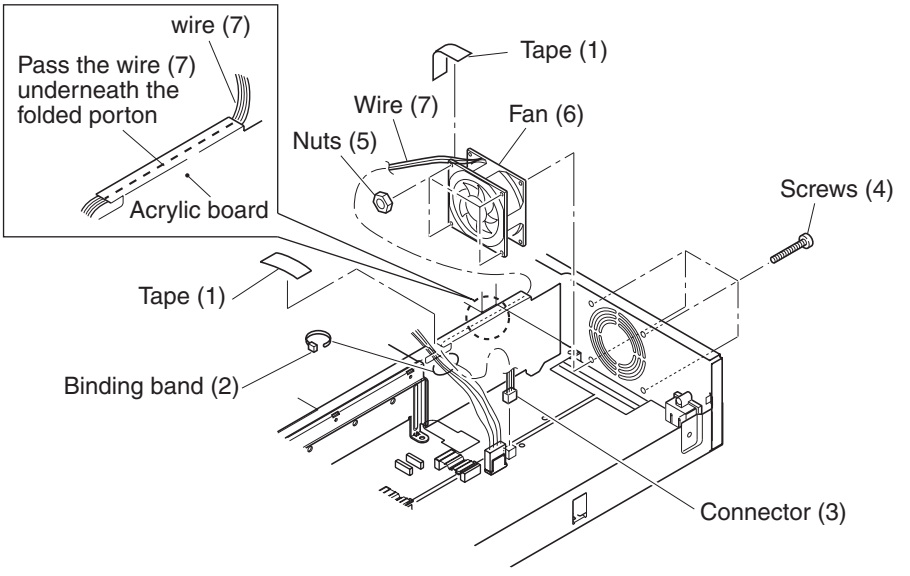


Fig. 2-1-5

1-1-6. Rear Panel

(1) Remove eight screws (1) and four screws (2).

(2) Remove the rear panel (3).

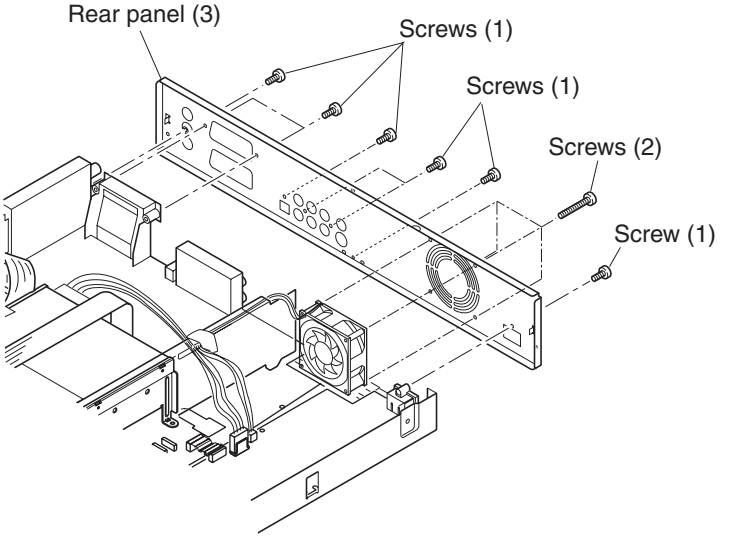


Fig. 2-1-6

1-2. PC Board Replacement

1-2-1. Digital PC Board

(1) Remove the front panel. (Refer item to 1-1-2.)

(2) Remove the RAM drive. (Refer item to 1-1-4.)

(3) Disconnect three connectors (1).

(4) Remove the screw (2) to remove the ground wire (3).

(5) Remove four screws (4), and then remove the digital PC board (5).

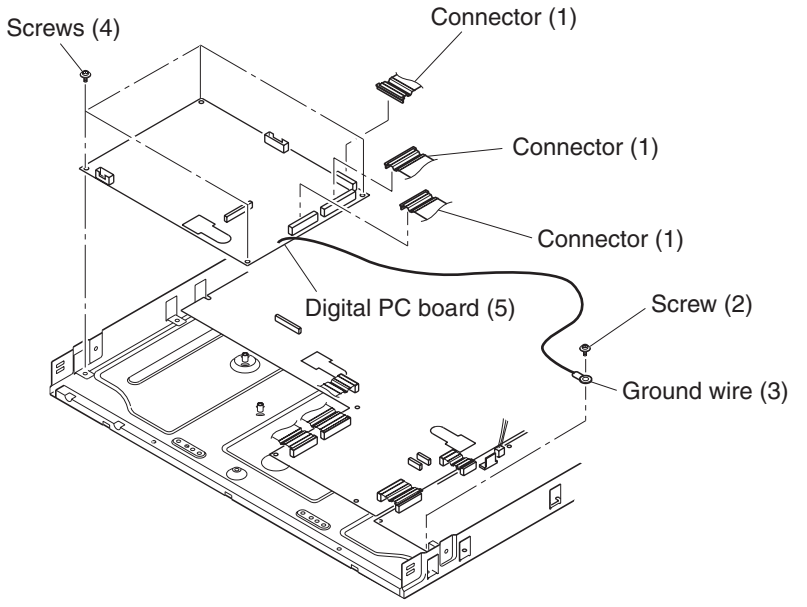


Fig. 2-1-7

1-2-2. Mother PC Board

(1) Remove the front panel. (Refer to item 1-1-2.)

(2) Remove the RAM drive. (Refer to item 1-1-4.)

(3) Remove the rear panel. (Refer to item 1-1-6.)

(4) Disconnect five connectors (1).

(5) Remove six screws (2), and then remove the mother PC board (3).

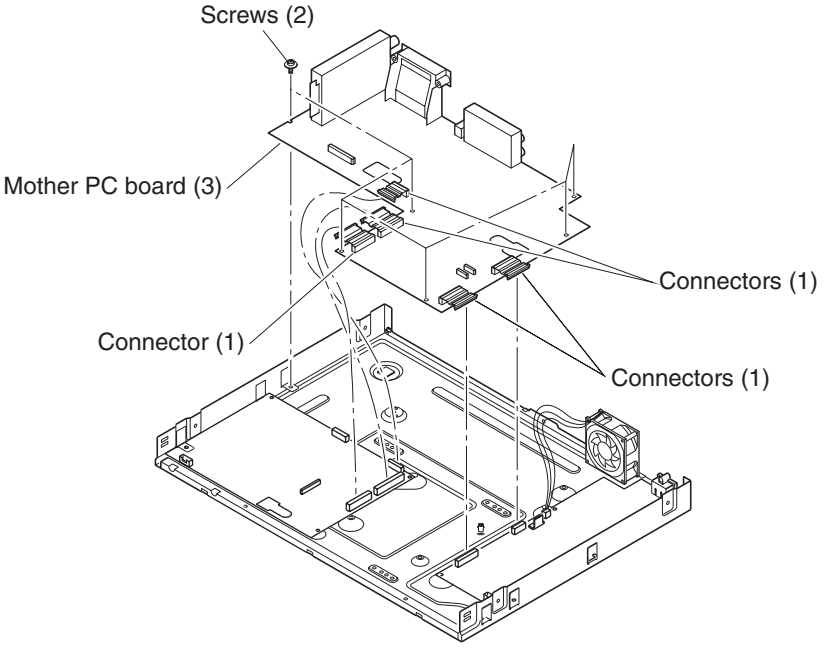


Fig. 2-1-8

1-2-3. Power PC Board

Cautions :

- **Danger of explosion if battery is incorrectly replaced.**
- **Replace only with the same or equivalent type.**

(1) Disconnect three connectors (1).

(2) Disconnect two connectors (2).

(3) Remove the screw (3) and four screws (4).

(4) Remove the power PC board (5).

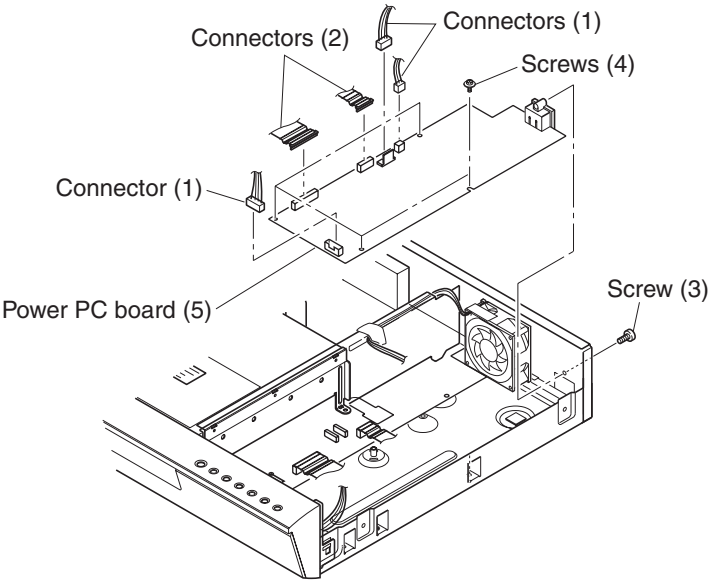


Fig. 2-1-9

1-2-4. Front (R), Front (L) and Jack PC Board

(1) Remove the top cover. (Refer to item 1-1-1.)

(2) Remove front panel. (Refer to item 1-1-2.)

(3) Remove two pieces of tape (1).

(4) Remove six screws (2), four claws and the stay (3).

(5) Remove three screws (4) to remove the front (R) PC board (5).

(6) Remove two screws (6) to remove the front (L) PC board (7).

(7) Remove four screws (8) to remove the jack PC board (9).

(Note)

After replacing, tape on two points (1) as they were.

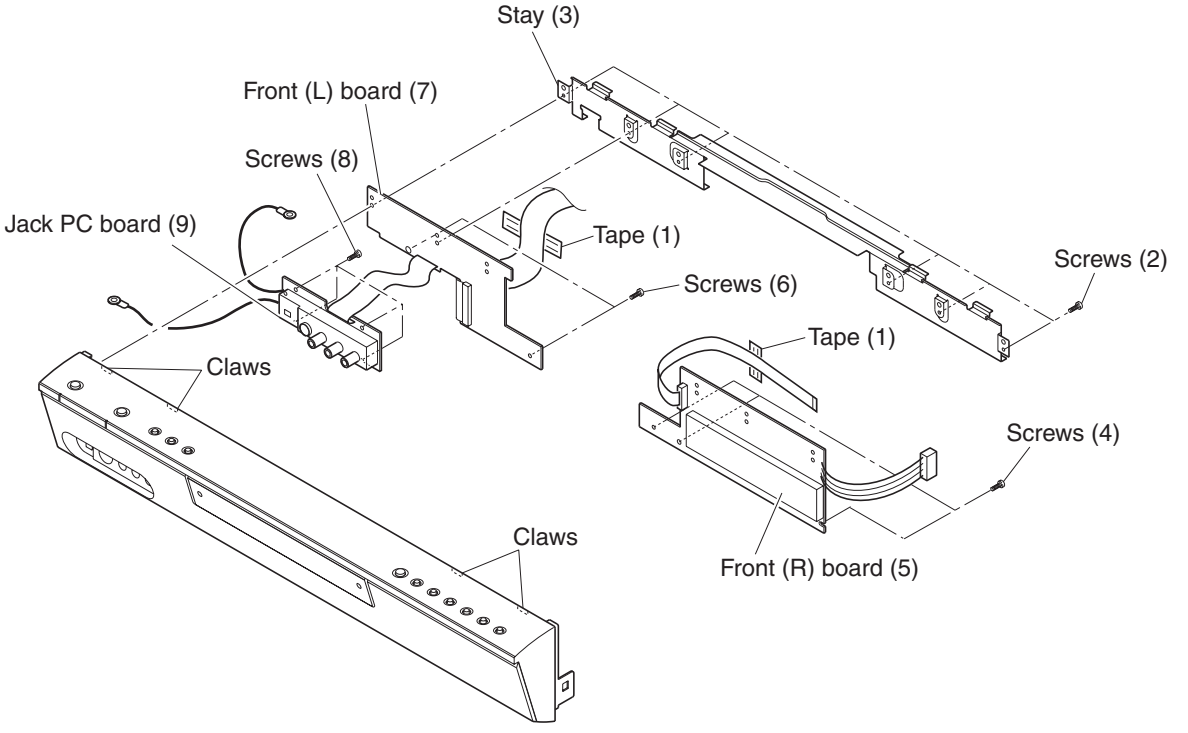


Fig. 2-1-10

SECTION 4
PARTS LIST

SAFETY PRECAUTION

The parts identified by ! (⚠) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

ABBREVIATIONS

1. Integrated Circuit (IC)

2. Capacitor (Cap)

- **Capacitance Tolerance (for Nominal Capacitance more than 10pF)**

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20	± 30

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 – 10	+ 50 – 10	+ 75 – 10	+ 20 – 10	+ 100 – 10	+ 40 – 20	+ 150 – 10	+ 80 – 20

Ex. 10µF J = 10µF ± 5%

- **Capacitance Tolerance (for Nominal Capacitance 10pF or less)**

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	± 0.1	± 0.25	± 0.5	± 1	± 2

Ex. 10pF G = 10pF ± 2pF

3. Resistor (Res)

- **Resistance tolerance**

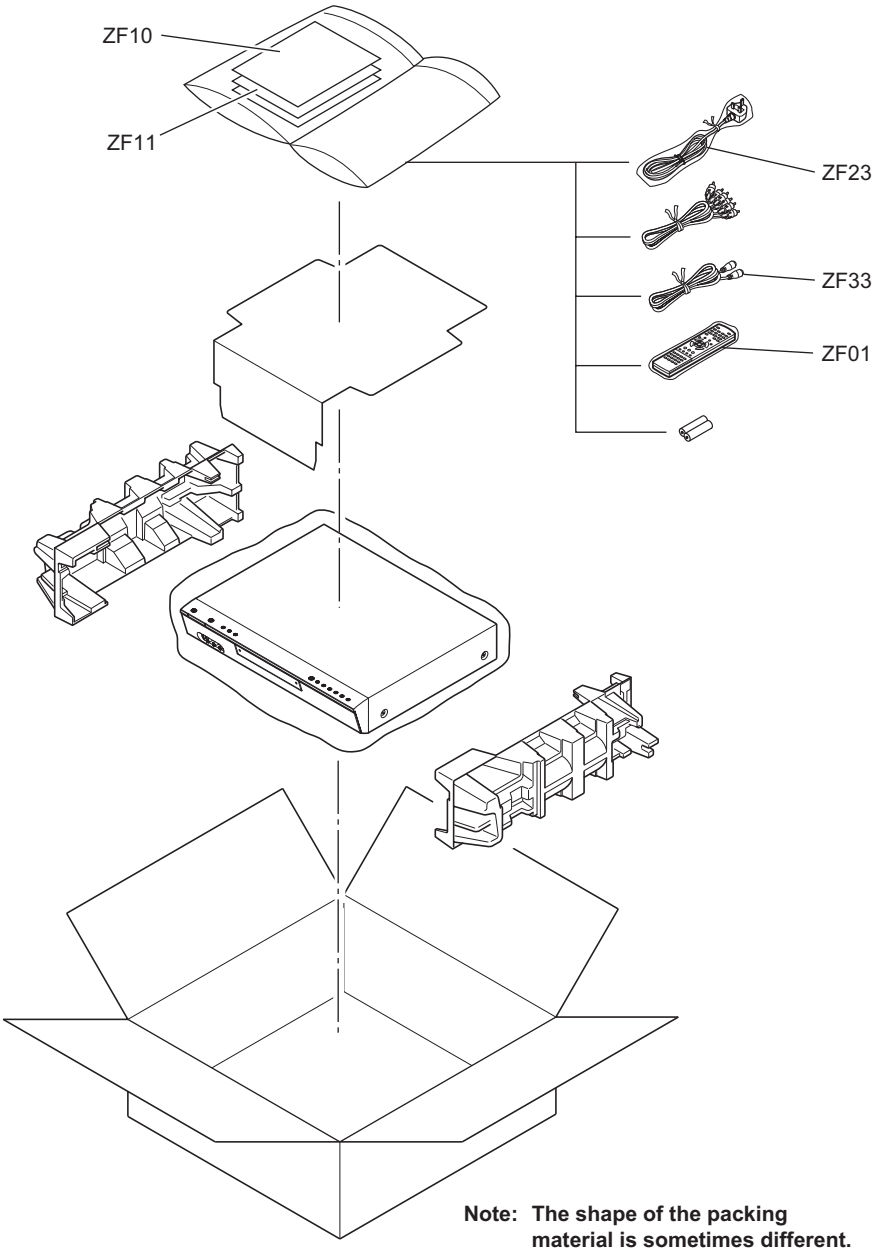
Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20

Ex. 470ΩJ = 470Ω± 5%

4. EXPLODED VIEWS

4-1. Packing Assembly



Note: The shape of the packing material is sometimes different.

Fig. 4-4-1

4-2. Chassis Assembly

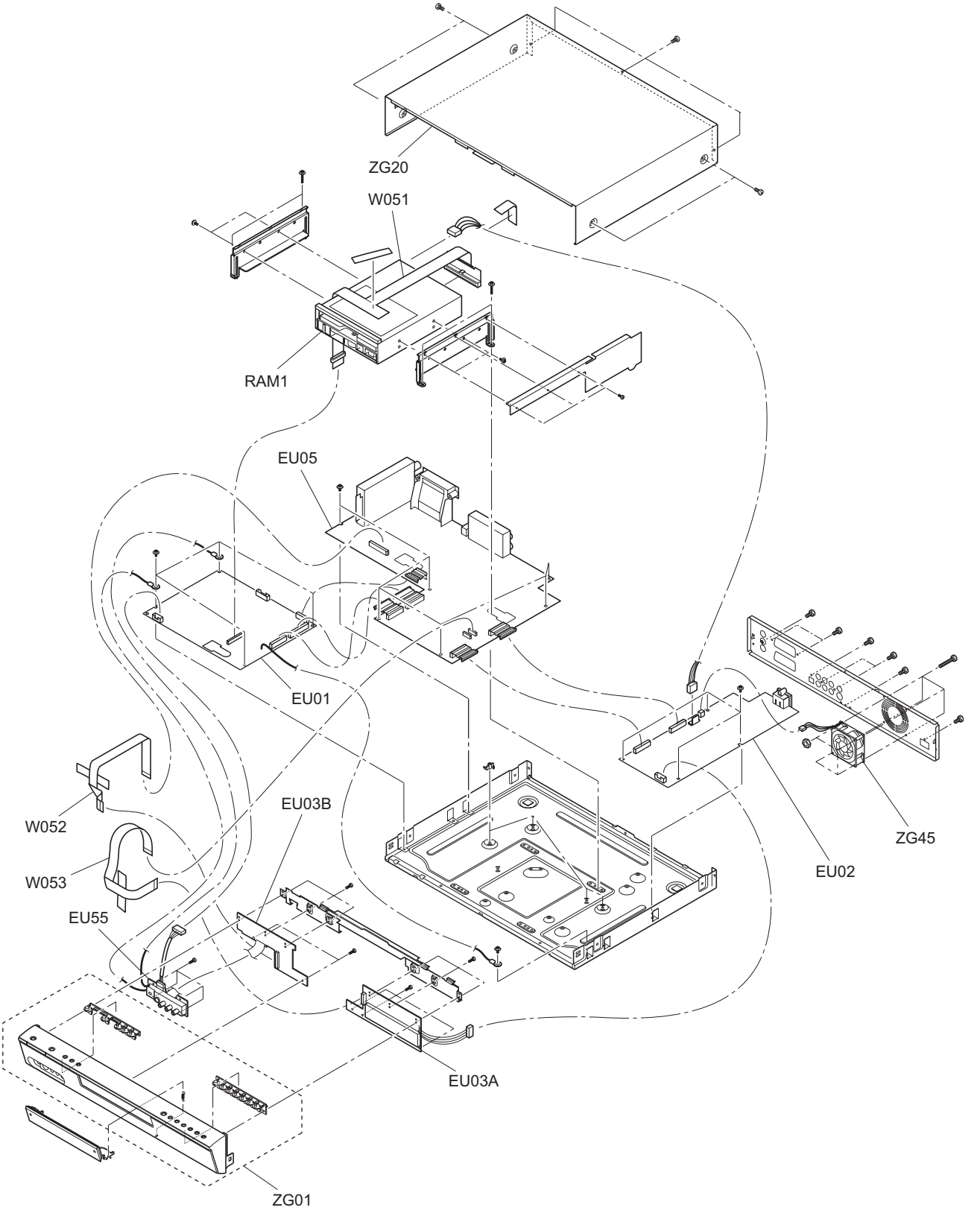


Fig. 4-4-2

5. PARTS LIST

*a: for D-R1SB, b: for D-R1SF, c: for D-R1SG

Safety	Location No.	Part No.	Description
			-MECHANICAL PARTS-
⚠	RAM1	P000391340	DVD-RAM, SD-W3002-TC-JC
	W051	P000387340	CABLE, FLEXIBLE, FFC-40P-L360
	W052	P000387350	CABLE, FLEXIBLE, FFC-28P-L320
	W053	P000387360	CABLE, FLEXIBLE, FFC-10P-L220
	ZF01	P000395210	REMOCON HAND UNIT, WIRELESS, SE-R0106
*b,c	ZF01	P000395270	REMOCON HAND UNIT, WIRELESS, SE-R0107
*a ⚠	ZF10	P000383620	OWNER'S MANUAL, ENGLISH, OP-DR1B
*b ⚠	ZF10	P000383640	OWNER'S MANUAL, FRANCE, OP-DR1F
*b ⚠	ZF10	P000390370	OWNER'S MANUAL, ITALY, OP-DR1F
*c ⚠	ZF10	P000383660	OWNER'S MANUAL, GERMAN, OP-DR1G
*c ⚠	ZF10	P000390390	OWNER'S MANUAL, ITALY, OP-DR1G
*c ⚠	ZF10	P000390400	OWNER'S MANUAL, SPANISH, OP-DR1G
*a ⚠	ZF11	P000383610	OWNER'S MANUAL, ENGLISH, ST-DR1B
*b ⚠	ZF11	P000383630	OWNER'S MANUAL, FRANCE/ITALY, ST-DR1F
*c ⚠	ZF11	P000383650	OWNER'S MANUAL, GERMAN, ST-DR1G
*c ⚠	ZF11	P000390380	OWNER'S MANUAL, ITALY/SPANISH, ST-DR1G
*a ⚠	ZF23	79088034	CORD, POWER, TB
*b,c ⚠	ZF23	79088010	CORD, POWER, TE
	ZF33	P000378320	U/V, PAL CABLE
*a	ZG01	P000395190	PANEL ASSY, FRONT, SILVER, D-R1SB
*b,c	ZG01	P000395280	PANEL ASSY, FRONT, SILVER, D-R1SF
	ZG20	P000387330	COVER, TOP, SILVER
	ZG45	P000387390	FAN, DC, D06T12TS901

Safety	Location No.	Part No.	Description
-ELECTRICAL PARTS-			
*a	EU01	P000395040	PC BOARD ASSY, DIGITAL, D-R1SB
*b	EU01	P000395220	PC BOARD ASSY, DIGITAL, D-R1SF
*c	EU01	P000395300	PC BOARD ASSY, DIGITAL, D-R1SG
	Q303	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	Q304	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QZ01	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QZ02	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QZ03	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QZ04	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QZ05	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QZ06	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	D301	79060019	DIODE, 1SS355
	D302	79060019	DIODE, 1SS355
	D303	79060019	DIODE, 1SS355
	D401	79060019	DIODE, 1SS355
	D402	79060019	DIODE, 1SS355
	IC505	P000391130	IC, TC7S04FU
	IC503	79040163	IC, MT48LC1M16A1TG
	IC518	P000391170	IC, MBM29DL640E90TN
	IC519	79040306	IC, PST594JMT
	IC401	79040379	IC, NJM2870F05(TE1)
	IC527	P000391290	IC, PQ1X331M2ZPH
	IC500	P000391280	IC, PQ070XZ01ZPH
	IC513	P000391280	IC, PQ070XZ01ZPH
	IC303	P000377900	IC, MM1563DFBE
	IC304	P000377900	IC, MM1563DFBE
	IC531	P000377900	IC, MM1563DFBE
	X501	P000377990	OSCILLATOR, QUARTZ, CRYSTAL
	IC509	P000378050	IC, SN74AHC1G04HDCKR
	IC510	P000378050	IC, SN74AHC1G04HDCKR
	IC529	P000378050	IC, SN74AHC1G04HDCKR
	IC517	P000378040	IC, SN74AHC1G08HDCKR
	IC523	P000378030	IC, SN74LVC244APWR
	IC506	P000391190	IC, PLL1707DBQ
	IC301	P000391200	IC, UPD64011AGM-8ED-Y
	IC515	P000391210	IC, K4H560838D-TCB000
	IC516	P000391210	IC, K4H560838D-TCB000
	IC520	P000391210	IC, K4H560838D-TCB000
	IC521	P000391210	IC, K4H560838D-TCB000
	IC504	P000391230	IC, UPD72852AGB-8EU
	IC528	P000391240	IC, NJM2125F(TE1)
	IC402	79040396	IC, PCM1742KE
	IC305	P000391250	IC, MM1561FFBE
	IC507	P000391270	IC, BA7082F
	IC502	P000391220	IC, UPD72893AGD
	X301	79089168	OSCILLATOR, QUARTZ, CRYSTAL
	X500	79089168	OSCILLATOR, QUARTZ, CRYSTAL
⚠	EU02	P000395200	PC BOARD ASSY, POWER SUPPLY 240V
	EU03A	----------	PC BOARD ASSY, DISPLAY-R

Safety	Location No.	Part No.	Description
	D101	79060022	DIODE, 1SS368
	D102	79060022	DIODE, 1SS368
	D126	79060022	DIODE, 1SS368
	D127	79060022	DIODE, 1SS368
	D128	79060022	DIODE, 1SS368
	D129	79060022	DIODE, 1SS368
	D134	79060022	DIODE, 1SS368
	D135	79060022	DIODE, 1SS368
	D136	79060022	DIODE, 1SS368
	D137	79060022	DIODE, 1SS368
	D138	79060022	DIODE, 1SS368
	D139	79060022	DIODE, 1SS368
	D140	79060022	DIODE, 1SS368
	D118	79060077	LED, YELLOW, SLA-360MT
	D119	79060100	LED, RED, SLI-325URCT31
	IC101	P000377960	IC, BU2879AK
	A101	P000391090	DISPLAY FL, HNV-10SM28T
	S102	P000391050	SWITCH, TACT
	S111	P000391050	SWITCH, TACT
	S112	P000391050	SWITCH, TACT
	S113	P000391050	SWITCH, TACT
	S114	P000391050	SWITCH, TACT
	S115	P000391050	SWITCH, TACT
	S116	P000391050	SWITCH, TACT
	Q105	P000391100	TRANSISTOR, DTD143EK T46
	Q101	79050089	TRANSISTOR, RN2401
	Q102	79050089	TRANSISTOR, RN2401
	EU03B	----------	PC BOARD ASSY, DISPLAY-L
	Q109	79050009	TRANSISTOR, CHIP, RN1401
	D124	79060022	DIODE, 1SS368
	D125	79060022	DIODE, 1SS368
	D142	79060022	DIODE, 1SS368
	D191	79060022	DIODE, 1SS368
	D123	79060033	LED, RED/GREEN, SPR-325MVWT31
	D120	79060091	LED, MVL-354B-T
	D121	79060091	LED, MVL-354B-T
	D122	79060091	LED, MVL-354B-T
	S103	P000377940	PUSH LEVER SWITCH
	BZ101	P000377950	BUZZER, PS1240P02AT
	D117	79060099	LED, ORANGE, SLI-325DCT31
	IC102	P000391110	IC, GP1UM281RK
	S101	P000391050	SWITCH, TACT
	S118	P000391050	SWITCH, TACT
	S120	P000391050	SWITCH, TACT
	S121	P000391050	SWITCH, TACT
	S122	P000391050	SWITCH, TACT
	Q115	P000391100	TRANSISTOR, DTD143EK T46
	Q108	79050089	TRANSISTOR, RN2401
	Q110	79050089	TRANSISTOR, RN2401
	Q111	79050089	TRANSISTOR, RN2401
	Q112	79050089	TRANSISTOR, RN2401
	Q113	79050089	TRANSISTOR, RN2401
	Q114	79050089	TRANSISTOR, RN2401

Safety	Location No.	Part No.	Description
	EU05	P000395050	PC BOARD ASSY, MOTHER
	K901	P000377870	RELAY, G6S-2DC5V
	KA61	P000377870	RELAY, G6S-2DC5V
	KA62	P000377870	RELAY, G6S-2DC5V
	QA01	79050014	TRANSISTOR, CHIP, HN1C03F-B
	QA02	79050014	TRANSISTOR, CHIP, HN1C03F-B
	QA03	79050043	TRANSISTOR, CHIP, RN1402
	QA04	79050001	TRANSISTOR, CHIP, RN2402
*b,c	QA61	79050016	TRANSISTOR, CHIP, 2SC2712-Y
*b,c	QA62	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QB02	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QB04	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QB21	P000395120	TRANSISTOR, CHIP, 2SC2714-Y
	QB22	P000395120	TRANSISTOR, CHIP, 2SC2714-Y
	QB60	P000395160	IC, PQ05DZ1UJ00H
	QB82	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QV01	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QV02	79050043	TRANSISTOR, CHIP, RN1402
	QV03	79050043	TRANSISTOR, CHIP, RN1402
	QV04	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QV05	79050043	TRANSISTOR, CHIP, RN1402
	QW01	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW02	79050043	TRANSISTOR, CHIP, RN1402
	QW03	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW04	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW05	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW06	79050001	TRANSISTOR, CHIP, RN2402
	QW07	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW08	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW10	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW11	79050043	TRANSISTOR, CHIP, RN1402
	QX01	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QX02	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QX04	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QX05	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QX07	79050016	TRANSISTOR, CHIP, 2SC2712-Y
*b,c	QZ01	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	Q902	79050001	TRANSISTOR, CHIP, RN2402
	Q903	79050014	TRANSISTOR, CHIP, HN1C03F-B
	Q904	79050014	TRANSISTOR, CHIP, HN1C03F-B
	Q906	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	Q901	79050043	TRANSISTOR, CHIP, RN1402
	Q910	79050043	TRANSISTOR, CHIP, RN1402
	Q911	79050043	TRANSISTOR, CHIP, RN1402
	QB83	79050043	TRANSISTOR, CHIP, RN1402
	QB84	79050043	TRANSISTOR, CHIP, RN1402
	D903	79060019	DIODE, 1SS355
	DA09	79060019	DIODE, 1SS355
	D905	79060019	DIODE, 1SS355
	D700	79060019	DIODE, 1SS355
	D901	79060028	DIODE, 1SS226
	D902	79060028	DIODE, 1SS226
	DV01	79060028	DIODE, 1SS226

Safety	Location No.	Part No.	Description
	DV02	79060028	DIODE, 1SS226
	DV03	79060028	DIODE, 1SS226
	DV04	79060028	DIODE, 1SS226
	DV05	79060028	DIODE, 1SS226
	DV06	79060028	DIODE, 1SS226
	DW01	79060028	DIODE, 1SS226
	DW02	79060028	DIODE, 1SS226
	DW03	79060028	DIODE, 1SS226
	DW04	79060019	DIODE, 1SS355
	DW05	79060028	DIODE, 1SS226
	DW06	79060028	DIODE, 1SS226
	DW07	79060028	DIODE, 1SS226
	DW08	79060019	DIODE, 1SS355
	DW09	79060028	DIODE, 1SS226
	DW10	79060028	DIODE, 1SS226
	DW11	79060028	DIODE, 1SS226
	DW12	79060028	DIODE, 1SS226
	DW13	79060028	DIODE, 1SS226
	DW14	79060028	DIODE, 1SS226
	DW15	79060019	DIODE, 1SS355
	DW16	79060028	DIODE, 1SS226
	DW17	79060019	DIODE, 1SS355
	DW19	79060019	DIODE, 1SS355
	DW20	79060028	DIODE, 1SS226
	DW21	79060028	DIODE, 1SS226
	DW22	79060019	DIODE, 1SS355
	DX01	79060028	DIODE, 1SS226
	DX02	79060028	DIODE, 1SS226
	DA10	79060098	DIODE, RB521S-30TE-61
	DA11	79060098	DIODE, RB521S-30TE-61
	DA12	79060098	DIODE, RB521S-30TE-61
	DA13	79060098	DIODE, RB521S-30TE-61
*b,c	DA61	79060019	DIODE, 1SS355
*b,c	DA62	79060019	DIODE, 1SS355
	ICA21	79040074	IC, TC74HCU04AF
	ICA24	79089024	TERMINAL, OPT, TOTX178
	IC700	79040330	IC, UPD78F4225YGC-8
	ICA19	79040044	IC, NJM4580E
	ICA32	79040044	IC, NJM4580E
	ICM01	P000378240	IC, MSP3417G
	ICM02	P000395160	IC, PQ05DZ1UJ00H
	ICZ01	79040381	IC, MM1503XNRE
	ICZ02	P000378270	IC, MM1508XNRE
	ICB80	79040371	IC, BA7046F
	ICB81	P000363370	IC, NJM2230MV(TE1)
	ICA07	79040379	IC, NJM2870F05(TE1)
	ICX01	79040382	IC, MM1140XFFE
	ICX02	79040369	IC, MM1113XFBE
	ICX03	P000395170	IC, NJM2875F05
	ICX04	P000395150	IC, MM1565AFBE
	MB01	P000395180	TUNER UNIT, TCMM0601PD08A
	RT700	P000377860	THERMISTER, NTSA0XH103EE1A0
	X701	P000363400	OSCILLATOR, QUARTZ, CRYSTAL
	DB01	79060096	DIODE, ZENER, MTZJT-7733D

Safety	Location No.	Part No.	Description
	DM01	79060019	DIODE, 1SS355
	IC909	P000391140	IC, TC74VHC125F
	IC910	P000391120	IC, TC7SET04F
	IC701	P000391180	IC, PST3222
	IC702	P000391150	IC, DC74HCT125M
	IC703	P000395140	IC, LC74793
	ICA01	P000377930	IC, AK5365VQ
	ICV01	P000391260	IC, MM1568DJBEG
	ICV02	P000391260	IC, MM1568DJBEG
	ICW01	P000378260	IC, MM1506XNRE
	ICW02	P000378260	IC, MM1506XNRE
	ICW03	P000378260	IC, MM1506XNRE
	ICW04	P000378270	IC, MM1508XNRE
	ICW05	P000395130	IC, TC74HC4053AF
	X700	P000391040	OSCILLATOR, QUARTZ, CRYSTAL
	XM01	P000395100	RESONATOR, CRYSTAL
	X702	P000395090	RESONATOR, CERAMIC
	JX01	P000395110	JACK BOARD, YKC22-0674N
	JX02	P000378280	21PIN, RGB CONNECTOR
	EU55	----------	PC BOARD ASSY, FRONT JACK
	J101	P000387310	CONNECTOR, PIN-JACK
	J102	P000387320	CONNECTOR, S-JACK
	J103	P000387300	CONNECTOR, DV-JACK

SPECIFICATIONS (D-R1SB)

Power requirement during operation	31W
Power requirement at standby	3.8W or below (Eco mode: off) 2.0W or below (Eco mode: on)
Power supply	230-240V AC, 50/60 Hz
Mass	4.2kg
External dimension	Width 430 x Height 78 x Depth 325mm
Tuner	System : Frequency synthesizer Channel coverage : PAL I VHF : A-J, 11, 13, E2-E12 UHF : E21-E69 CATV : X, Y, Z, S1-S41, 1-53 (48MHz to 464MHz, 8MHz steps) Stereo : NICAM-I
Antenna input/output terminal	VHF/UHF : 75Ω, Coaxial Connector
Signal system	Standard PAL Color TV system
Laser	Semiconductor laser, Wavelength : 650nm/780nm
Format	DVD-VR format DVD-Video format
Image recording system	MPEG2
Sound recording system	Dolby digital, M1, M2, Linear PCM
VIDEO input	1.0Vp-p (75Ω), Sync signal negative, Pin jack x 1 system, 1 in front, SCART socket x 2 at rear
VIDEO output	1.0Vp-p (75Ω), Sync signal negative, Pin jack x 1 system, 1 at rear, SCART socket x 2 at rear
S-VIDEO input	(Y) 1.0Vp-p (75Ω), Sync signal negative, (C) 0.286Vp-p (75Ω), 1 in front, Mini DIN4 Pin x 1 system SCART socket x 1 at rear
S-VIDEO output	(Y) 1.0Vp-p (75Ω), Sync signal negative, (C) 0.286Vp-p (75Ω), 1 at rear, Mini DIN4 Pin x 1 system SCART socket x 1 at rear
COMPONENT output (Y, P_B, P_R)	Y output (green), 1.0Vp-p (75Ω), Sync signal negative, Pin jack x 1 system P_B, P_R output (blue, red), 0.7Vp-p (75Ω), Pin jack x 1 system each
AUDIO input	2.0V (rms), 50kΩ or below, pin jack (L, R) x 1 system 1 in front, SCART socket x 2 at rear
AUDIO output	2.0V (rms), 200Ω or above, pin jack (L, R) x 1 system 1 at rear, SCART socket x 2 at rear
DIGITAL AUDIO output BITSTREAM/PCM (Optical terminal)	Optical connector x 1 system
DIGITAL AUDIO output BITSTREAM/PCM (Coaxial terminal)	0.5Vp-p (75Ω), pin jack x 1 system
DV input	4-pin x 1 in front
Remote control	Wireless remote control (SE-R0106)
Operating conditions	Temperature : 5°C ~ 35°C, Position: Horizontal
Clock display	24 hour digital display
Clock accuracy	Quartz (monthly deviation : approximately ±30 seconds)

- The design and specifications may change without prior notice.
- The Illustrations and screens described in this manual may be exaggerated or simplified for easy recognition and may be slightly different from the actual unit.

Supplied Accessories

Remote control	1
Batteries (R03)	2
Power cord	1
Coaxial cable	1
Video/Audio cable	1
OWNER'S MANUAL (INSTALLATION GUIDE)	1
OWNER'S MANUAL (OPERATIONS)	1
Quick Reference	1

Fiche technique (D-R1SF)

Alimentation requise pendant le fonctionnement	31W
Alimentation requise en veille	3,8W ou moins (mode Eco: désactivé) 2,0W ou moins (mode Eco: activé)
Alimentation	230-240V CA, 50/60Hz
Poids	4,2kg
Dimensions extérieures	Largeur 430 x Hauteur 78 x Profondeur 325mm
Syntonisateur	Système : Synthétiseur de fréquence Couverture du canal : SECAM L VHF : FA, FB, FC1, FC, F1-F6 UHF : E21-E69 CATV : B-Q, H1-H21, 1-18, 70-99 PAL B/G VHF : E2-E12, A-H SECAM B/G M4-M10, R1-R12, U1-U5 UHF : E21-E69 CATV : S1-S41, X, Y, Z, Z+1, Z+2 PAL D/K VHF : A-H, M4-M10 SECAM D/K E2-E12, R1-R12, U1-U5 UHF : E21-E69 CATV : S1-S41, X, Y, Z, Z+1, Z+2 PAL I VHF : A-J, 11, 13, E2-E12 UHF : E21-E69 CATV : X, Y, Z, 1-53
Borne d'entrée/sortie d'antenne	Connecteur coaxial VHF/UHF: 75Ω
Système de signal	Système TV couleur standard PAL/SECAM
Laser	Laser à semi-conducteur, longueur d'onde: 650nm/780nm
Format	Format d'enregistrement DVD-VR Format DVD-vidéo
Système d'enregistrement vidéo	MPEG2
Système d'enregistrement audio	Dolby digital M1, M2, PCM linéaire
Entrée VIDEO	1,0Vc-c (75Ω), signal sync. négative, Jack à broche x 1 système, 1 à l'avant Prise PERITEL x 2 à l'arrière
Sortie VIDEO	1,0Vc-c (75Ω), signal sync. négative, Jack à broche x 1 système, 1 à l'arrière Prise PERITEL x 2 à l'arrière
Entrée S-VIDEO	(Y) 1,0Vc-c (75Ω), signal sync. négative, (C) 0,286Vc-c (75Ω), 1 à l'avant Mini connecteur DIN4 x 1 système Prise PERITEL x 1 à l'arrière
Sortie S-VIDEO	(Y) 1,0Vc-c (75Ω), signal sync. négative, (C) 0,286Vc-c (75Ω), 1 à l'arrière Mini connecteur DIN4 x 1 système Prise PERITEL x 1 à l'arrière
Sortie COMPONENT (Y, P_B, P_R)	Sortie Y (vert), 1,0Vc-c (75Ω), signal sync. négative, jack à broche x 1 système Sortie P_B, P_R (bleu, rouge), 0,7Vc-c (75Ω), Jack à broche x 1 système chacun
Entrée AUDIO	2,0V (rms), 50 kΩ ou moins, jack à broche (L, R) x 1 système, 1 à l'avant Prise PERITEL x 2 à l'arrière
Sortie AUDIO	2,0V (rms), 200Ω ou plus, jack à broche (L, R) x 1 système, 1 à l'arrière Prise PERITEL, 2 à l'arrière
DIGITAL AUDIO OUTPUT BITSTREAM/PCM (borne OPTICAL)	Connecteur optique x 1 système
DIGITAL AUDIO OUTPUT BITSTREAM/PCM (borne COAXIAL)	0,5Vc-c (75Ω), jack à broche x 1 système
Entrée DV	4-broches x 1 à l'avant
Télécommande	Télécommande sans fil (SE-R0107)
Conditions de fonctionnement	Température: 5ºC ~ 35ºC, Position: Horizontale
Affichage d'horloge	Affichage numérique 24 heures
Précision de l'horloge	Quartz (écart mensuel: environ ±30 secondes)

- Conception et spécifications sous réserve de modification sans préavis.
- Les illustrations et les écrans décrits dans ce mode d'emploi sont seulement des exemples qui peuvent être exagérés ou simplifiés pour faciliter la reconnaissance et peuvent différer légèrement de cet appareil actuel.

Accessoires fournis

Télécommande	1
Piles (R03)	2
Câble d'alimentation	1
Câble coaxial	1
Câble audio/vidéo	1
MODE D'EMPLOI (GUIDE D'INSTALLATION)	1
MODE D'EMPLOI (FONCTIONNEMENT)	1

Technische Daten (D-R1SG)

Leistungsaufnahme im Betrieb	31W
Leistungsbedarf im Standby	3,8W oder weniger (Eco-Modus: Aus) 2,0W oder weniger (Eco-Modus: Ein)
Stromversorgung	230-240V AC, 50/60Hz
Gewicht	4,2kg
Externe Abmessungen	Breite 430 x Höhe 78 x Tiefe 325mm
Tuner	System : Frequenz-Synthesizer Kanalabdeckung : PAL B/G VHF : E2-E12, A-H SECAM B/G M4-M10, R1-R12, U1-U5 UHF : E21-E69 CATV : S1-S41, X, Y, Z, Z+1, Z+2 PAL D/K VHF : A-H, M4-M10 SECAM D/K E2-E12, R1-R12, U1-U5 UHF : E21-E69 CATV : S1-S41, X, Y, Z, Z+1, Z+2
Antennenanschluss Ein- und Ausgang	VHF/UHF: 75Ω, Koaxialen Anschluss
Farbsystem	Standard PAL/SECAM Farbsystem
Laser	Halbleiterlaser, Wellenlänge: 650nm/780nm
Format	DVD-VR format DVD-Video format
Bildaufnahmesystem	MPEG2
Tonaufnahmesystem	Dolby digital M1, M2, Linear PCM
VIDEO-Eingang	1,0Vp-p (75Ω), Synch-Signal negative, Steckerbuchsen x 1 System, 1 vorne SCART-Buchse, 2 hinten
VIDEO-Ausgang	1,0Vp-p (75Ω),Synch-Signal negative, Steckerbuchsen x 1 System, 1 hinten SCART-Buchse, 2 hinten
S-VIDEO-Eingang	(Y) 1,0Vp-p (75Ω), Synch-Signal negative, (C) 0,286Vp-p (75Ω), 1 vorne Mini DIN 4-pol x 1 System SCART-Buchse, 2 hinten
S-VIDEO-Ausgang	(Y) 1,0Vp-p (75Ω), Synch-Signal negative, (C) 0,286Vp-p (75Ω), 1 hinte, SCART-Buchse, 2 hinten Mini DIN 4-pol x 1 System
COMPONENT-Ausgang (Y, P_B, P_R)	Y Ausgang (Grün) 1,0 Vp-p (75Ω), Synch-Signal negativ, Steckerbuchse x 1 System P_B, P_R Ausgang (Blau,Rot), 0,7 Vp-p (75Ω), Steckerbuchse x 1 System jeweils
AUDIO-Eingang	2,0V (rms), 50kΩ oder weniger, Steckerbuchse (L,R) x 1 System,1 vorne, SCART-Buchse, 2 hinten
AUDIO-Ausgang	2,0V (rms), 200Ω oder mehr, Steckerbuchse (L,R) x 2 System, 1 vorne, SCART-Buchse, 2 hinten
DIGITAL AUDIO OUTPUT BITSTREAM/PCM (OPTICAL Anschluss)	Optischer Abschluss x 1 System
DIGITAL AUDIO OUTPUT BITSTREAM/PCM (COAXIAL Anschluss)	0,5Vp-p (75Ω), Steckerbuchse x 1 System
DV-Eingang	4-pol. x 1 vorne
Fernbedienung	Drahtlose Fernbedienung (SE-R0107)
Betriebsbedingungen	Temperatur: 5ºC bis 35ºC Position: Horizontal
Uhranzeige	24-Stunden-Digitalanzeige
Uhrengenauigkeit	Quarz (monatliche Abweichung: etwa ±30 Sekunden)

- Das Design und die technischen Daten können ohne vorherige Benachrichtigung geändert werden.
- Die in diesem Handbuch beschriebenen Abbildungen und Bildschirme könnten zur einfacheren Erkennung übertrieben oder vereinfacht dargestellt oder ein wenig anders als am tatsächlichen Gerät sein.

Mitgeliefertes Zubehör

Fernbedienung 1
Batterien (R03) 2
Netzkabel 1
Koaxialkabel 1
Video-/Audiokabel 1
BEDIENUNGSANLEITUNG (INSTALLATIONSANLEITUNG)
BEDIENUNGSANLEITUNG (BEDIENUNG)

TOSHIBA CORPORATION
1–1, SHIBAURA 1– CHOME, MINATO – KU, TOKYO 105 – 8001, JAPAN

TOSHIBA

FILE NO. 810-200338

SERVICE MANUAL

DVD VIDEO RECORDER

D-R1SB
D-R1SF
D-R1SG

December, 2003 Ⓨ

SECTION 3
SERVICING DIAGRAMS

1. CIRCUIT SYMBOLS AND SUPPLEMENTARY EXPLANATION

1-1. Circuit Symbols

Solid Resistor Indication

Tab. 3-1-1

Unit	None ..... Ω K ..... kΩ M ..... MΩ
Tolerance	None ..... ±5% B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% K ..... ±10% M ..... ±20%
Rated Wattage	(1) Chip Parts None ..... 1/16W (2) Other Parts None ..... 1/6W Other than above, described in the Circuit Diagram.
Type	None ..... Carbon film S ..... Solid R ..... Oxide metal film M ..... Metal film W ..... Cement FR ..... Fusible

Eg. 1

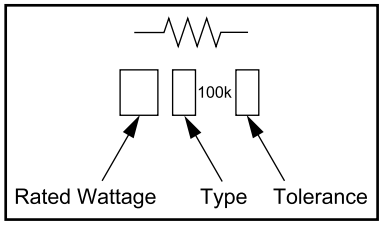


Fig. 3-1-1

Inductor Indication

Tab. 3-1-2

Unit	None ..... H μ ..... μH m ..... mH
Tolerance	None ..... ±5% B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% K ..... ±10% M ..... ±20%

Eg. 2

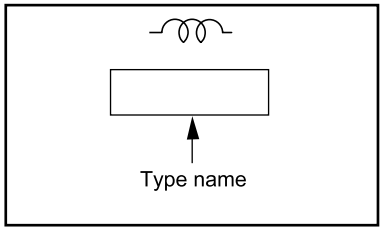


Fig. 3-1-2

Eg. 3

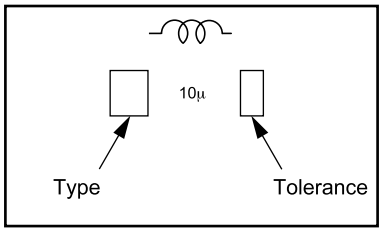


Fig. 3-1-3

Capacitance Indication

Tab. 3-1-3

Symbol	..... Electrolytic, Special electrolytic NP ..... Non polarity electrolytic ..... Ceramic, plastic M ..... Film ..... Trimmer
Unit	None ..... F μ ..... μF p ..... pF
Rated voltage	None ..... 50V For other than 50V and electrolytic capacitors, described in the Circuit Diagram.
Tolerance	(1) Ceramic, plastic, and film capacitors of which capacitance are more than 10 pF. None ..... ±5% or more B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% (2) Ceramic, plastic, and film capacitors of which capacitance are 10 pF or less. None ..... more than ±5 pF B ..... ±0.1 pF C ..... ±0.25 pF (3) Electrolytic, Trimmer Tolerance is not described.
Temperature characteristic (Ceramic capacitor)	None ..... SL For others, temperature characteristics are described. (For capacitors of 0.01 μF and no indications are described as F.)
Static electricity capacity (Ceramic capacitor)	Sometimes described with abbreviated letters as shown in Eg. 3.

Eg. 4

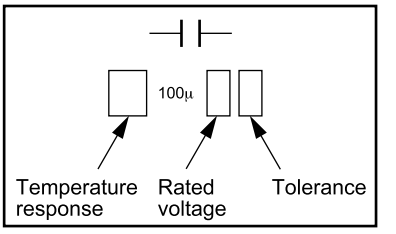


Fig. 3-1-4

Eg. 5

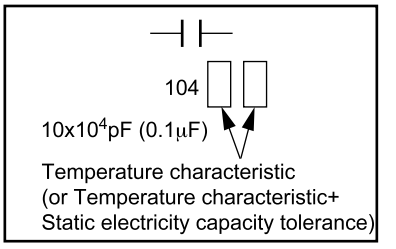


Fig. 3-1-5

Waveform and Voltage Measurement

- The waveforms for CD/DVD and RF shown in the circuit diagrams are obtained when a test disc is played back.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

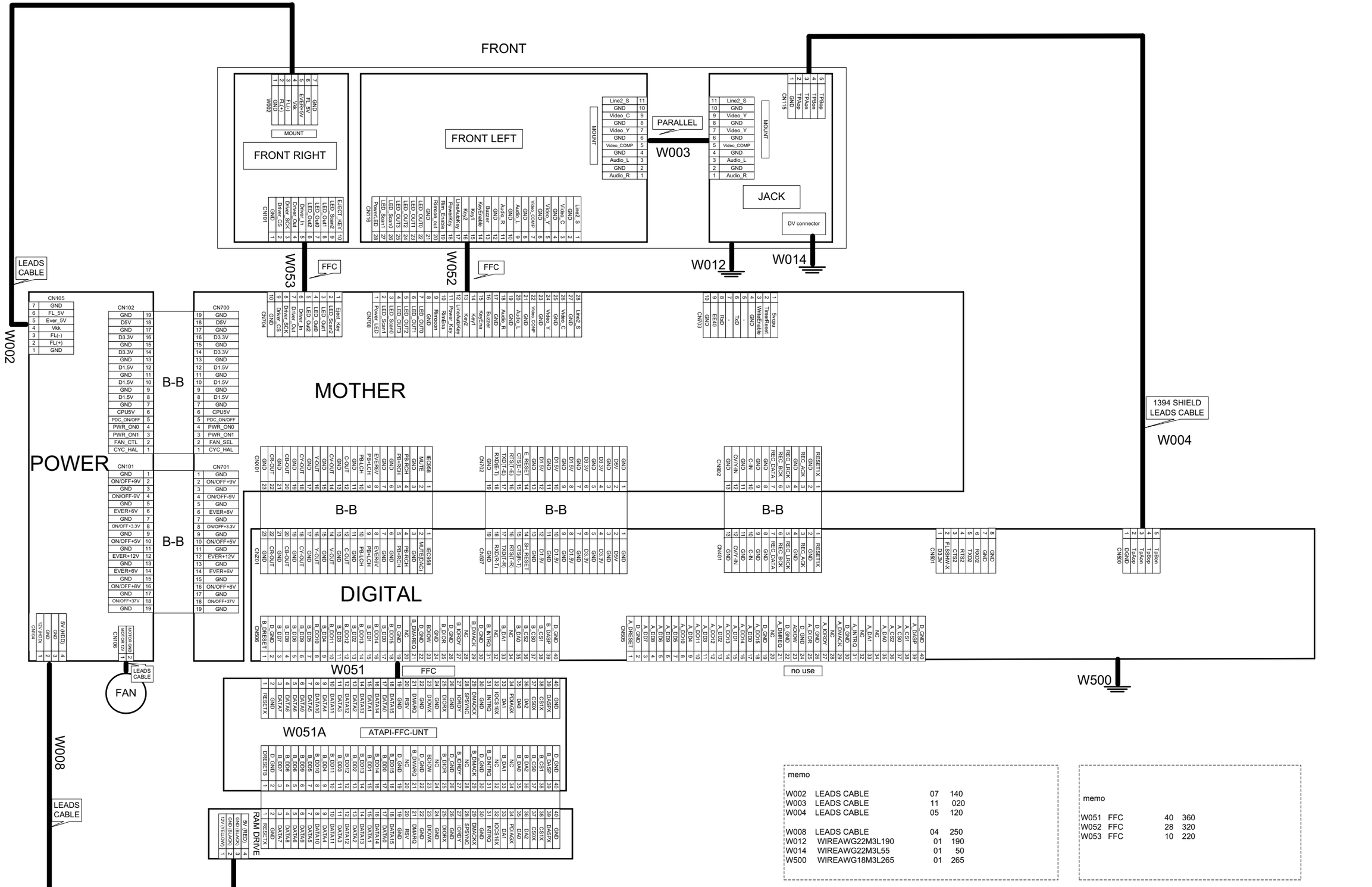
Others

- The parts indicated with "NC" or "KETU" etc. are not used in the circuits of this model.

1-2. Precautions for Part Replacement

- In the schematic diagram, parts marked ⚠ (ex. ⚠ F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire etc.

2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM



memo			
W002	LEADS CABLE	07	140
W003	LEADS CABLE	11	020
W004	LEADS CABLE	05	120
W008	LEADS CABLE	04	250
W012	WIREAWG22M3L190	01	190
W014	WIREAWG22M3L55	01	50
W500	WIREAWG18M3L265	01	265

memo			
W051	FFC	40	360
W052	FFC	28	320
W053	FFC	10	220

Fig. 3-2-1

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram

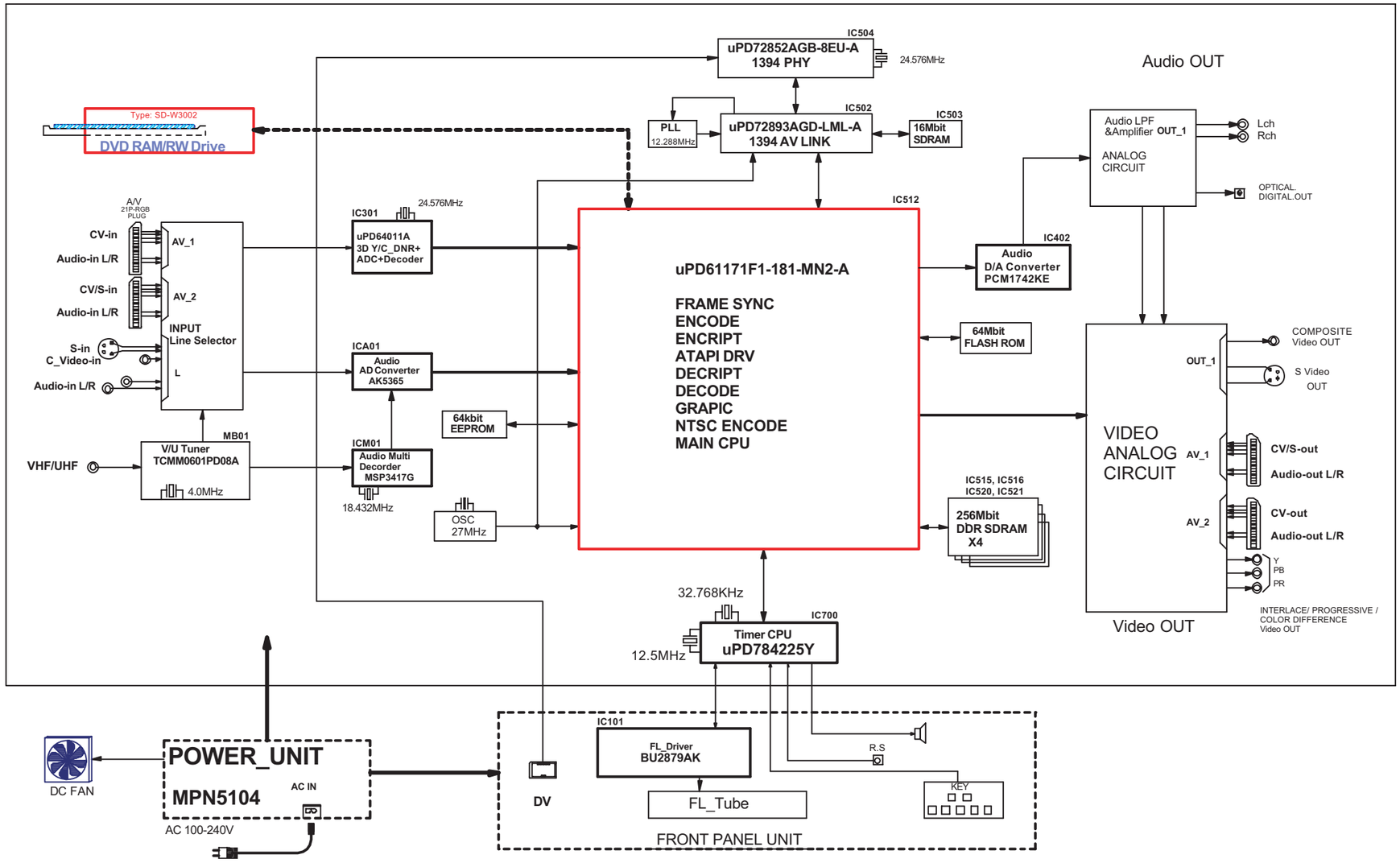


Fig. 3-3-1

4. CIRCUIT DIAGRAMS

4-1. Power Supply Circuit Diagram

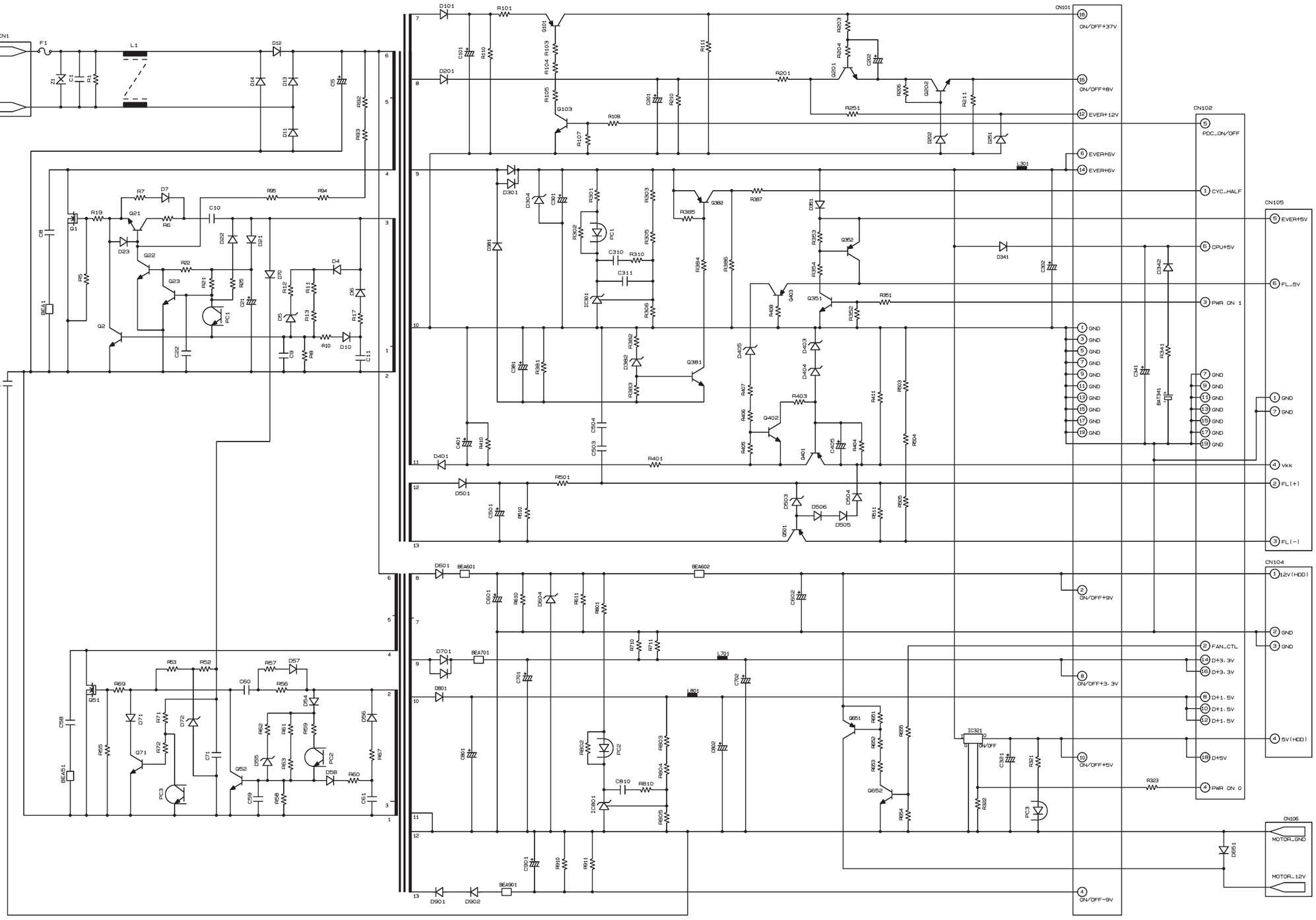


Fig. 3-4-1

4-2. Front Circuit Diagram

4-2-1. Front (Jack) Circuit Diagram

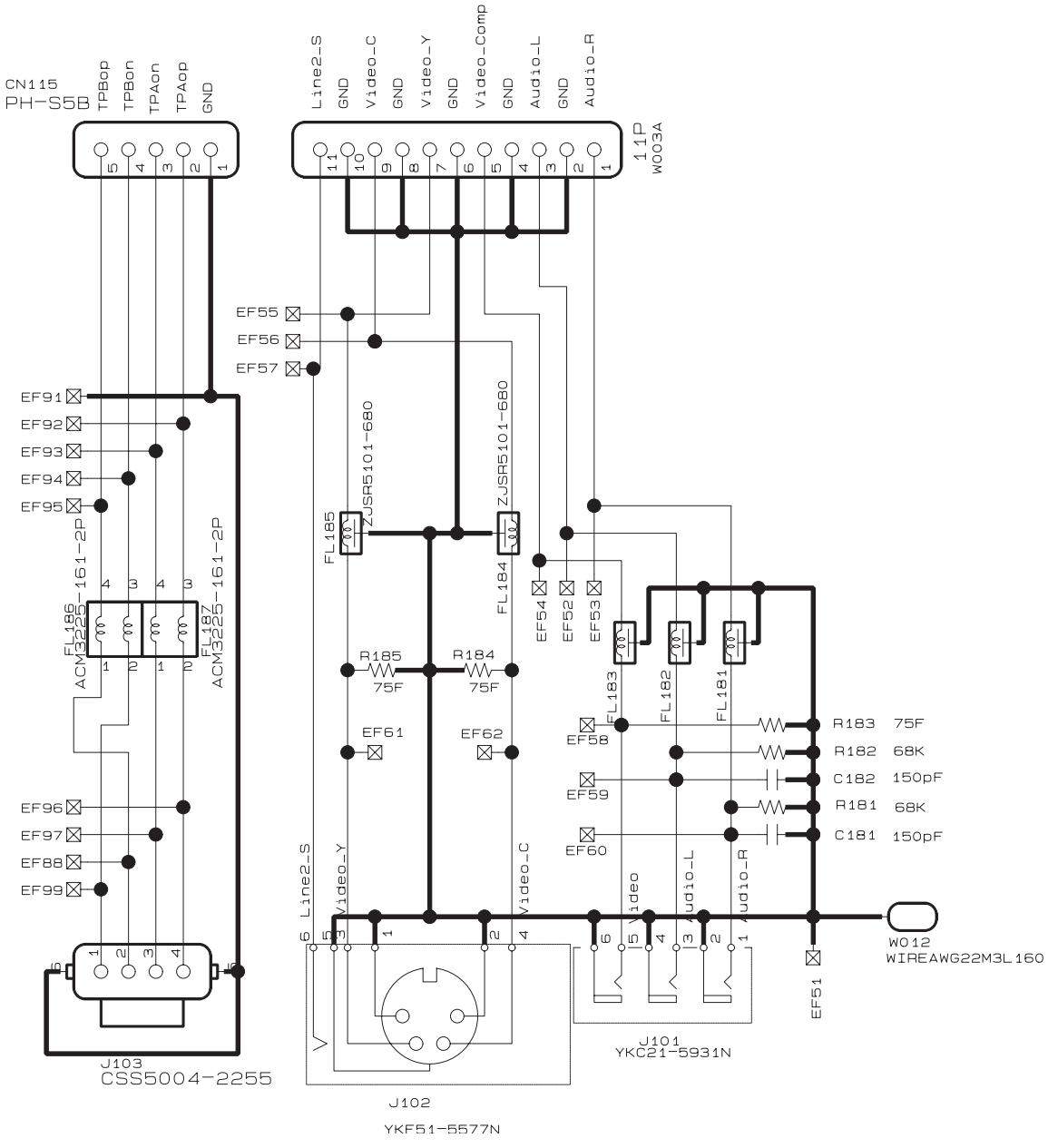
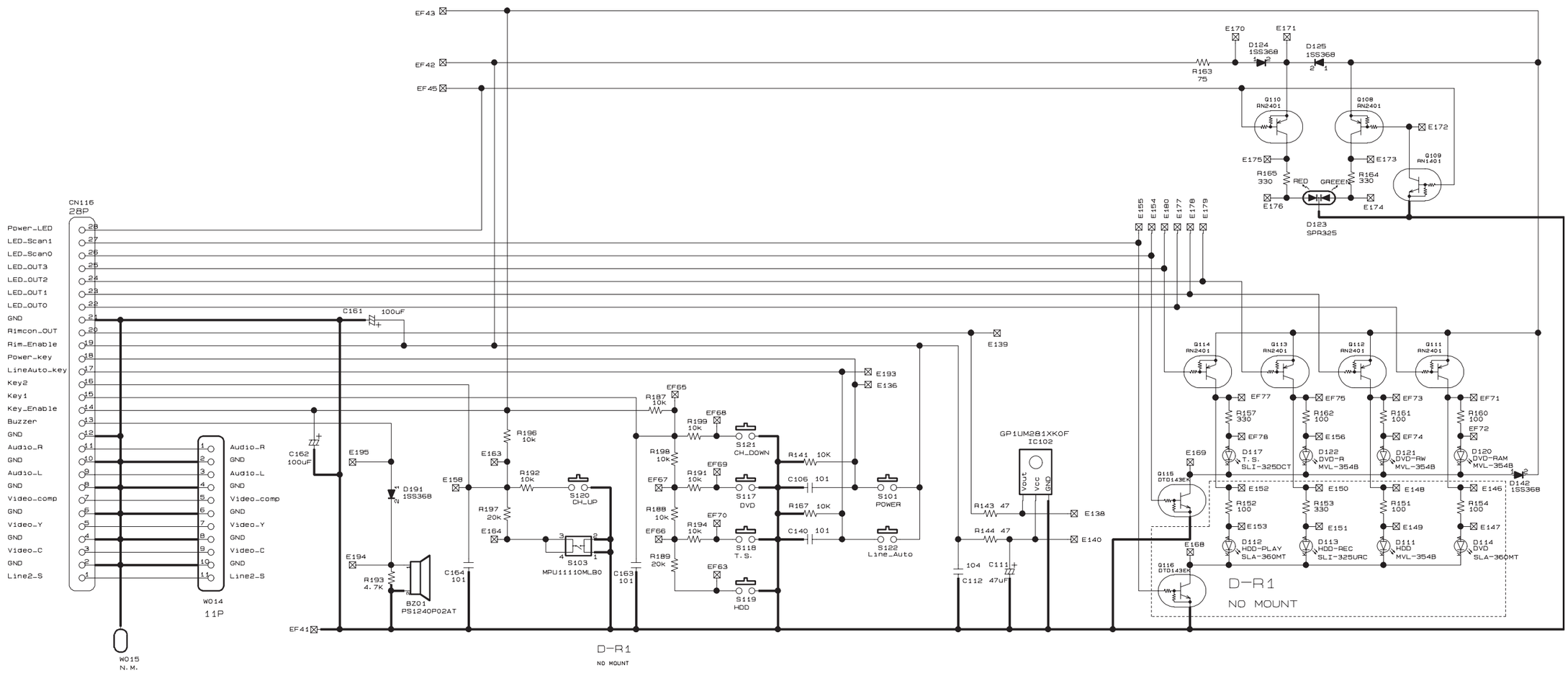


Fig. 3-4-2

4-2-2. Front (L) Circuit Diagram



D-R1

Parts : NO MOUNT

Fig. 3-4-3

4-2-3. Front (R) Circuit Diagram

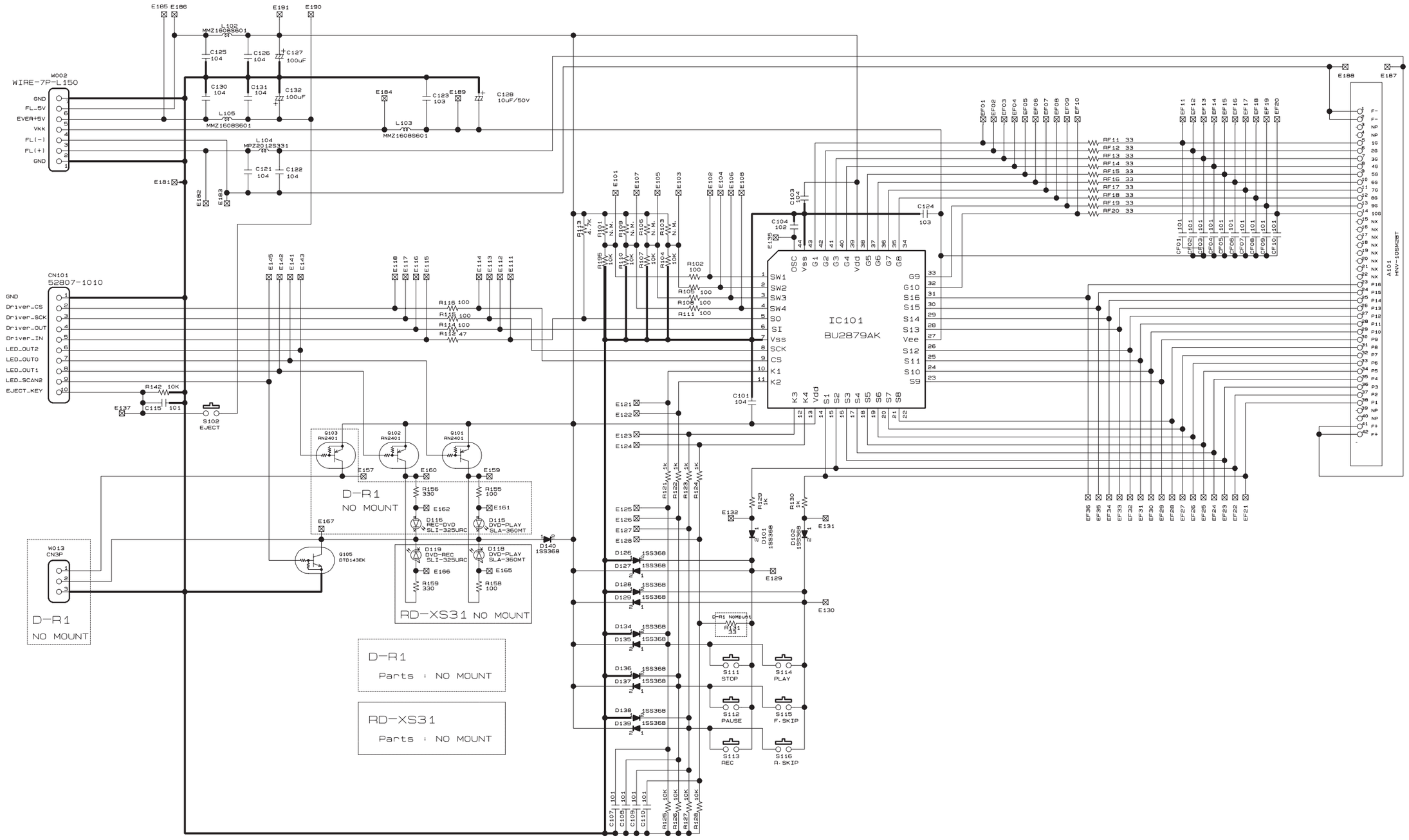


Fig. 3-4-4

4-3. Digital Circuit Diagram

4-3-1. Digiral 1 Circuit Diagram

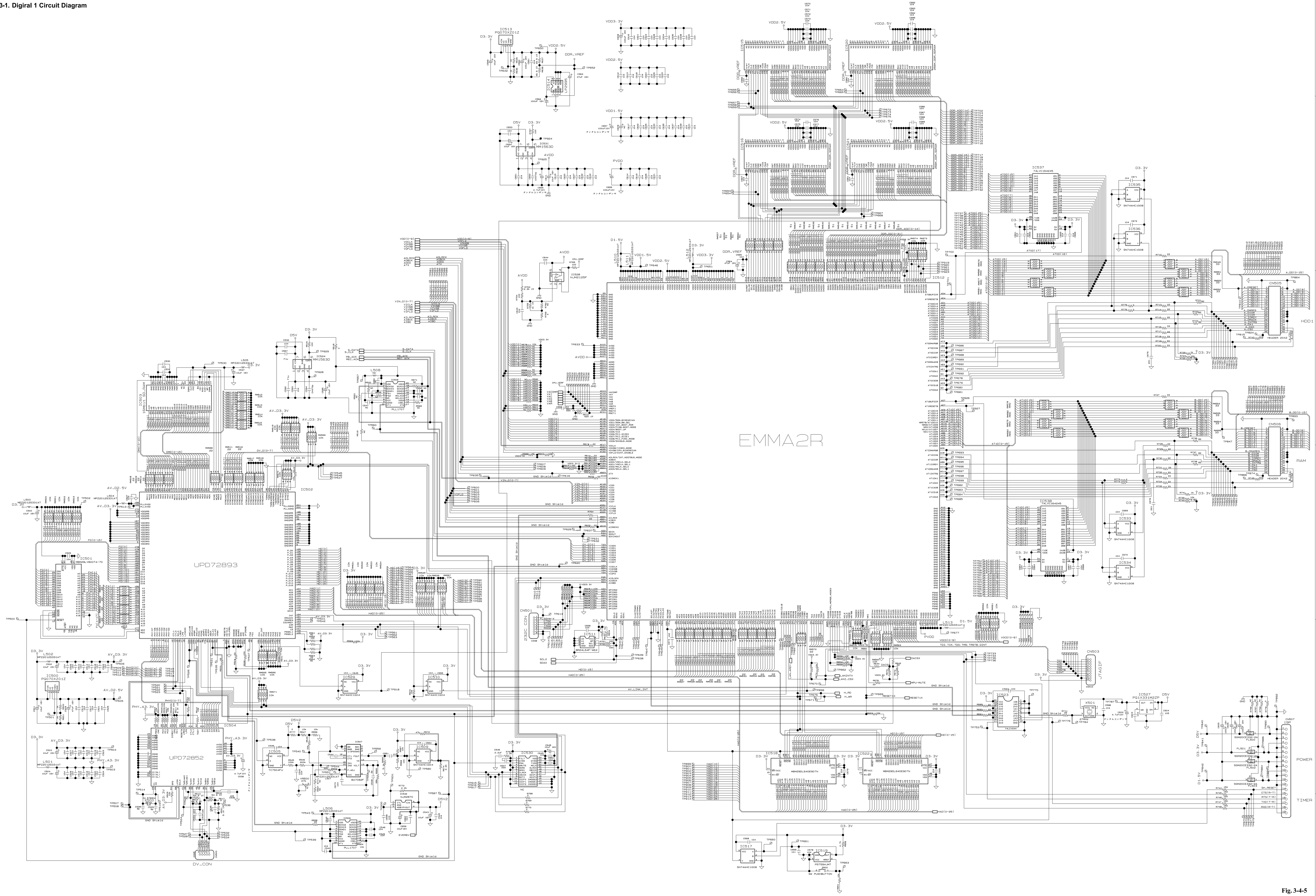


Fig. 3-4-5

4-3-2. Digital 2 Circuit Diagram

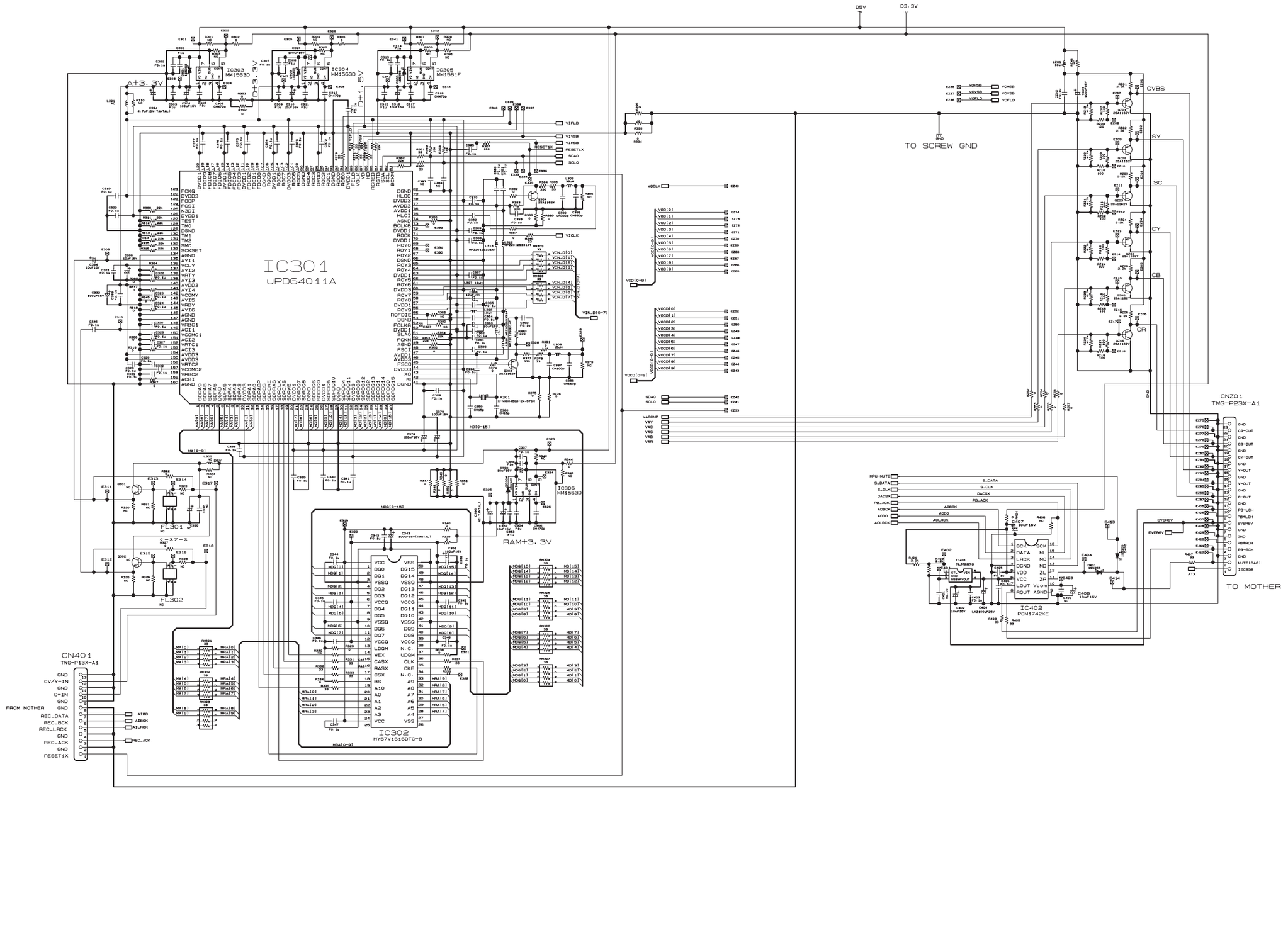


Fig. 3-4-6

4-4. Mother Circuit Diagram

4-4-1. Tuner Circuit Diagram

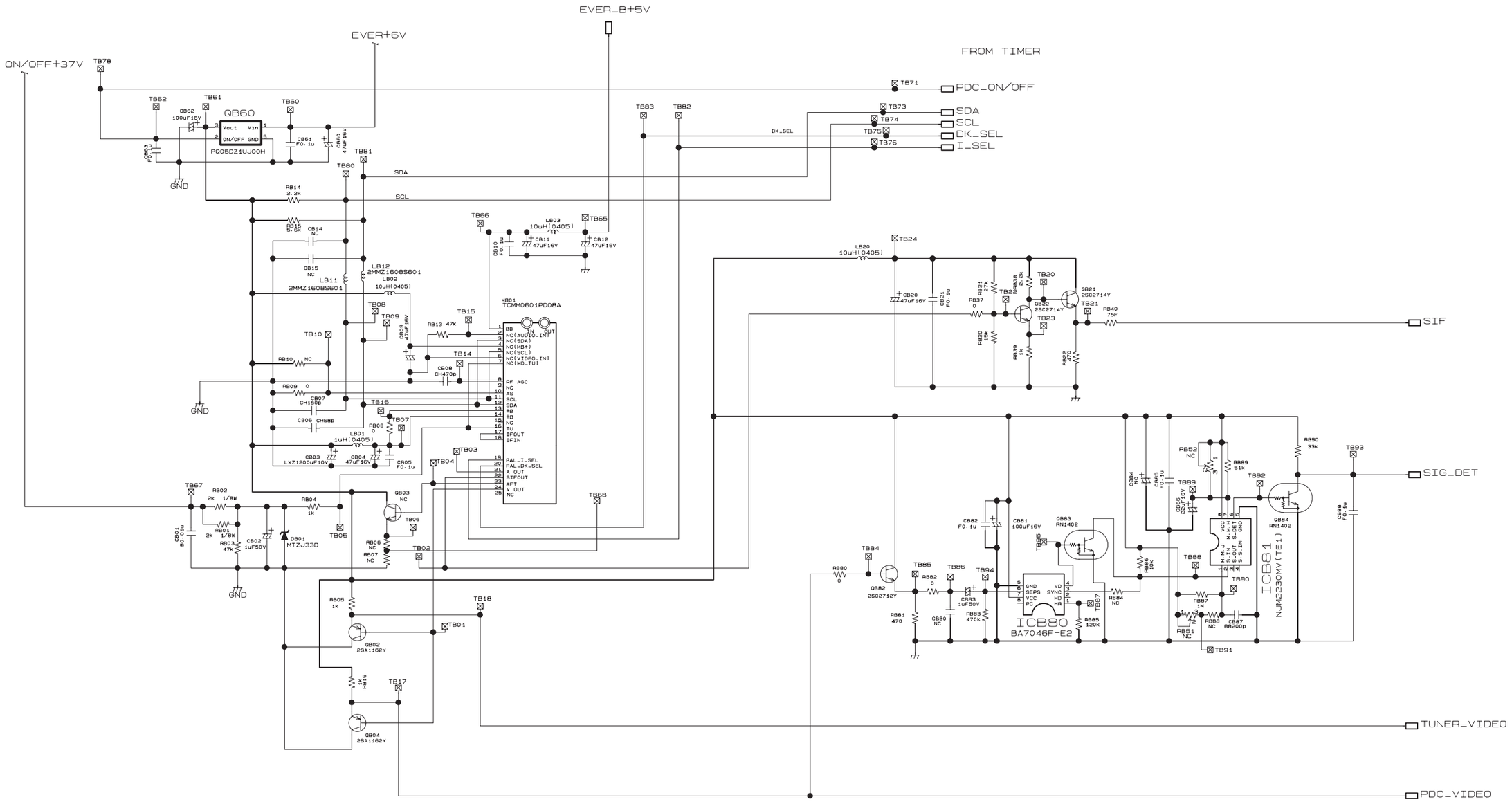


Fig. 3-4-7

4-4-2. Timer Circuit Diagarm

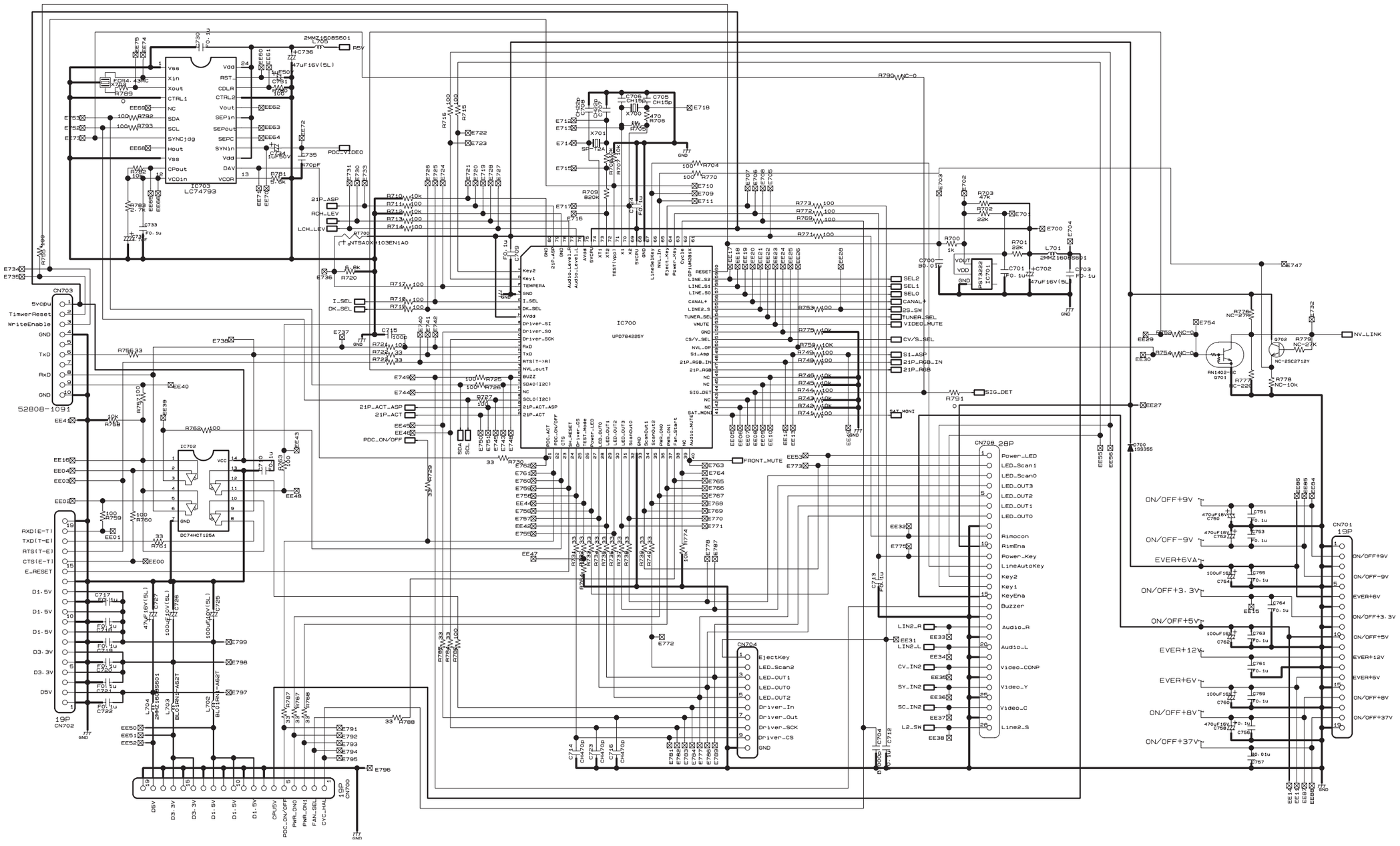
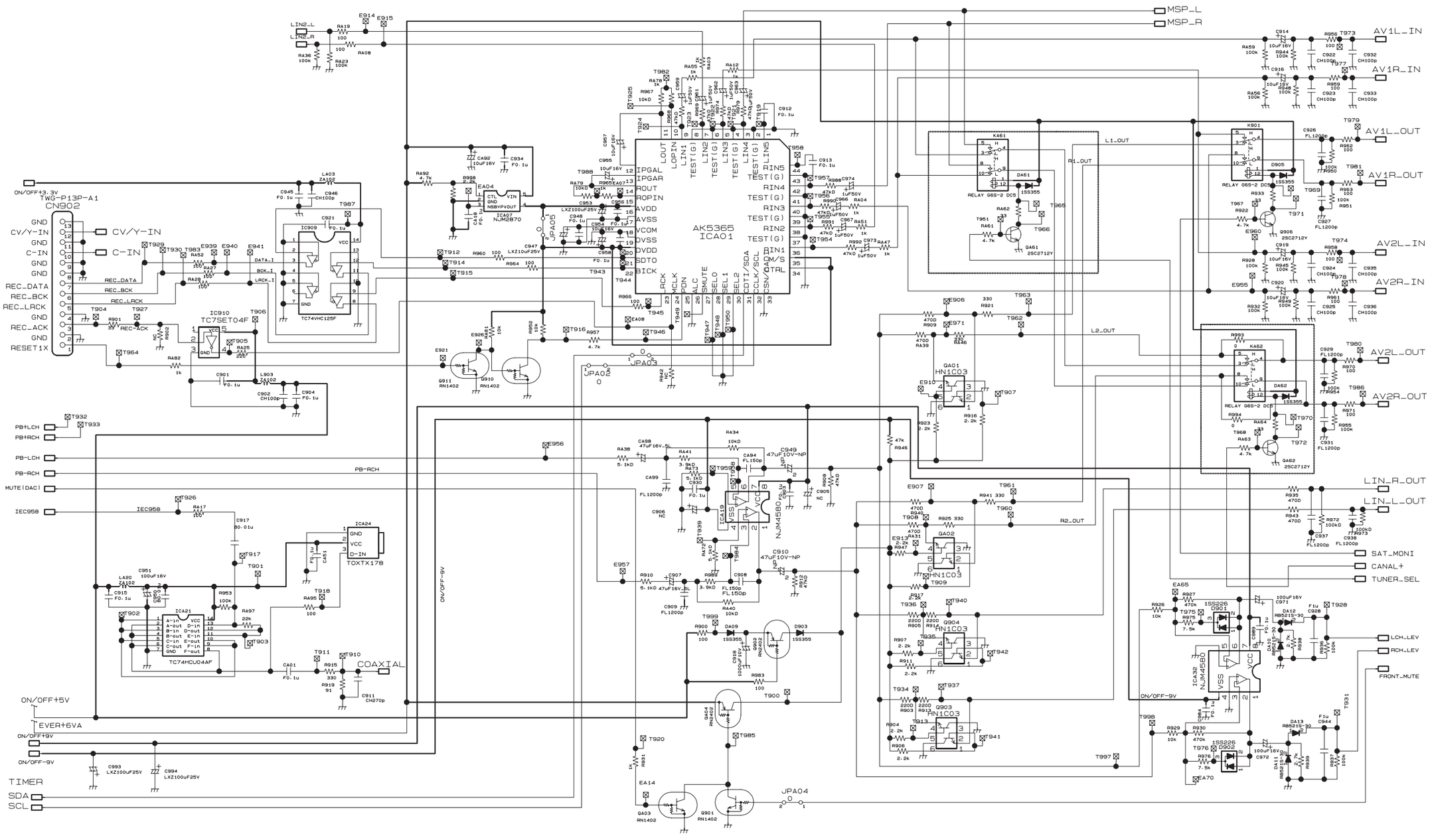


Fig. 3-4-8

4-4-3. Audio Circuit Diagram

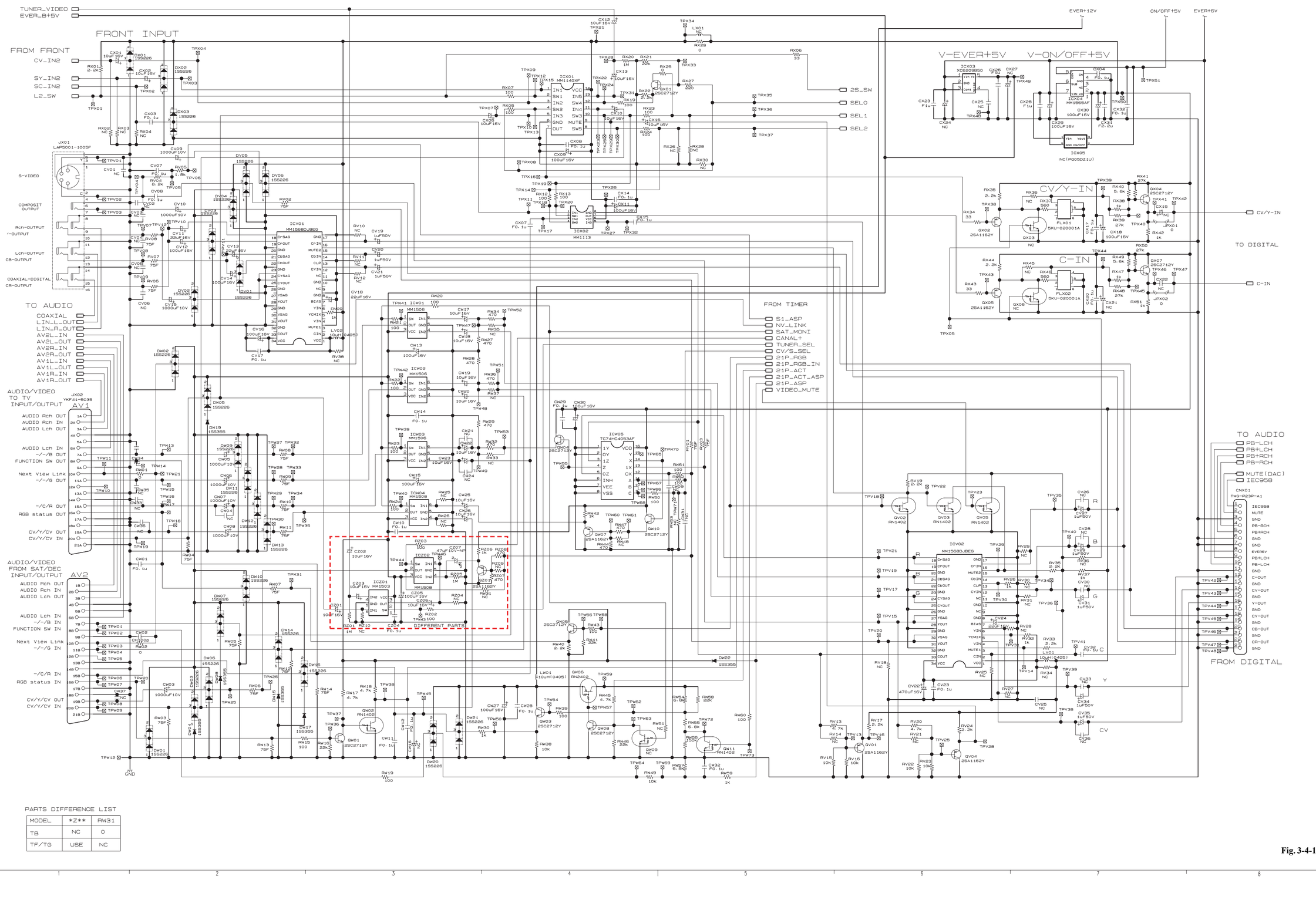


SYMBOL DIFFERENCE LIST

SYMBOL \ MODEL	D-R1 TB	D-R1 TF/TG
KA61 KA62 DA61 DA62 QA61 QA62 RA61 RA62 RA63 RA64	NC	USE
R993 R994	USE	NC

Fig. 3-4-9

4-4-4. Video Circuit Diagram



PARTS DIFFERENCE LIST

MODEL	*Z**	RW31
TB	NC	0
TF/TG	USE	NC

Fig. 3-4-10

A B C D E F G

4-4-5. MSP Circuit Diagram

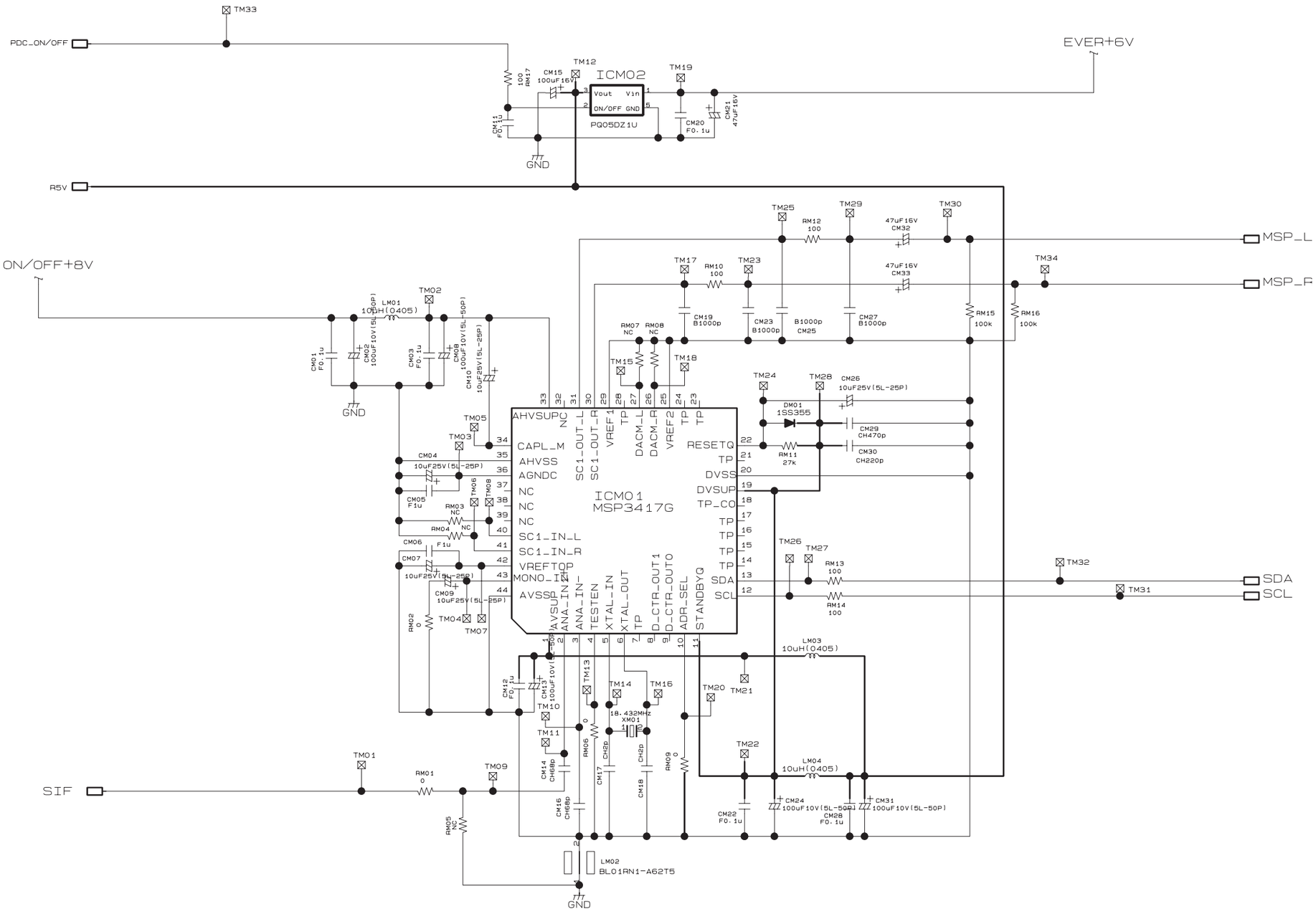


Fig. 3-4-11

5. PC BOARDS

5-1. Front (L) PC Board

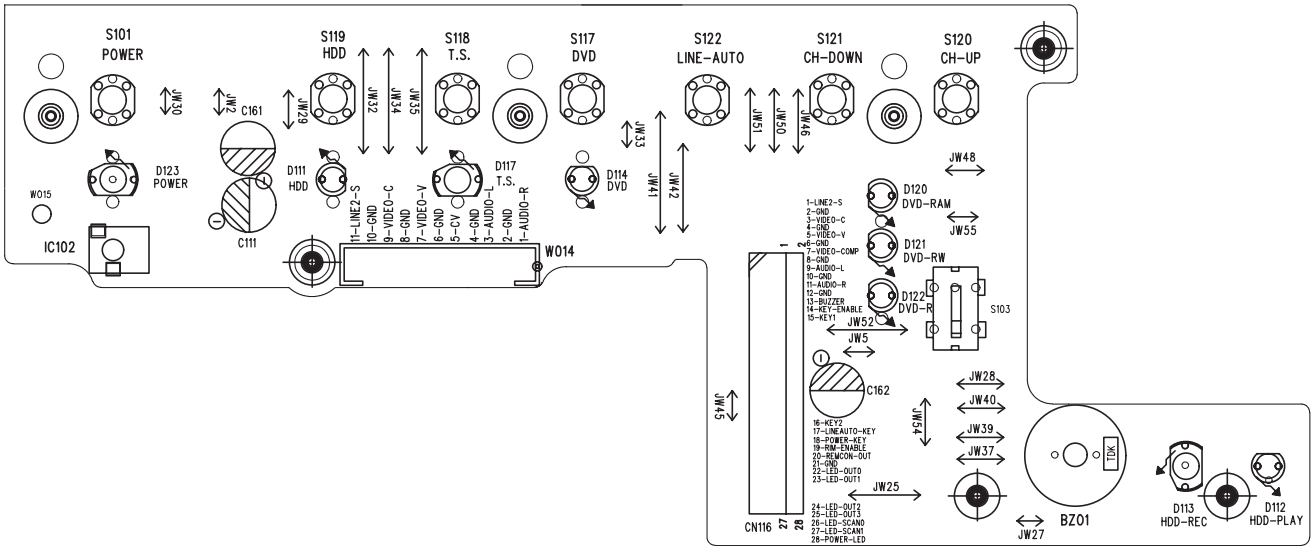


Fig. 3-5-1 EU03B Front (L) PC Board (Top side)

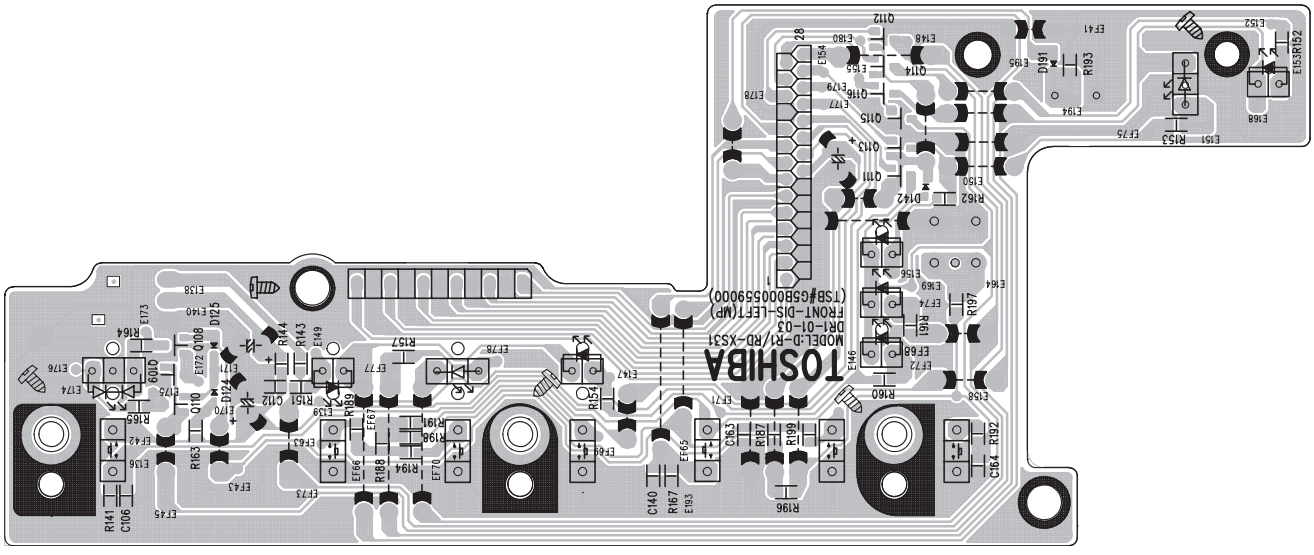


Fig. 3-5-2 EU03B Front (L) PC Board (Bottom side)

5-2. Front (R) PC Board

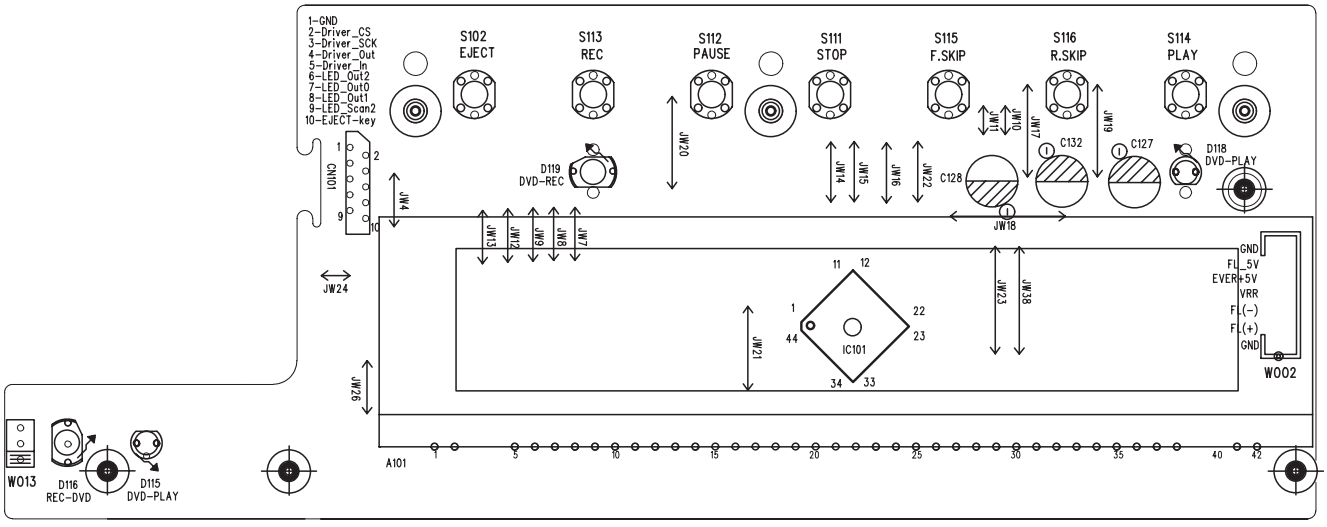


Fig. 3-5-3 EU03A Front (R) PC Board (Top side)

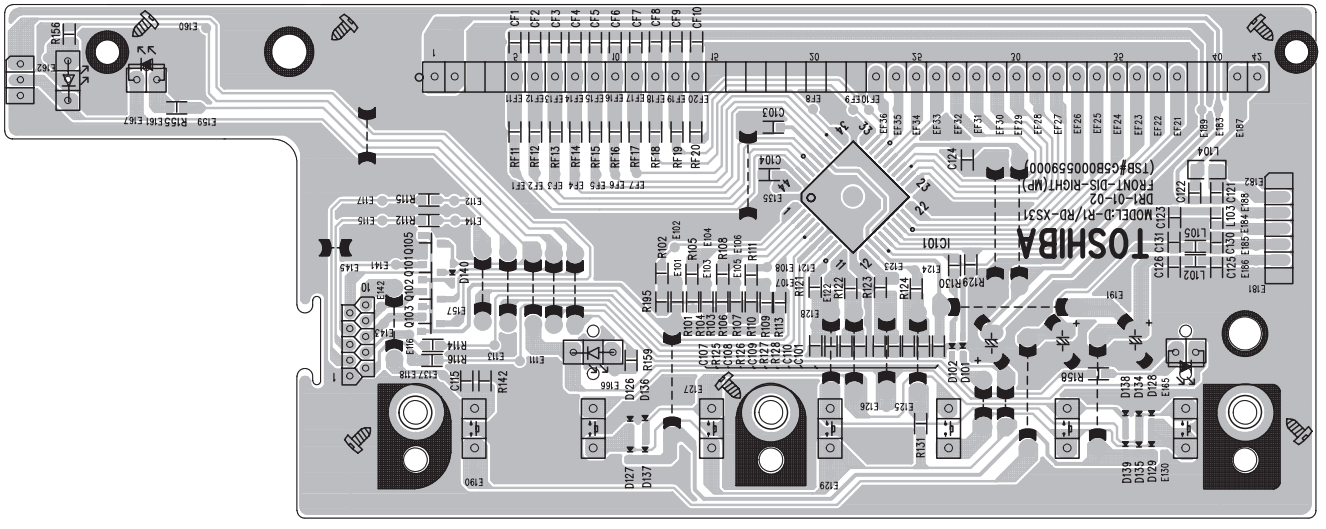


Fig. 3-5-4 EU03A Front (R) PC Board (Bottom side)

5-3. Front (Jack) PC Board

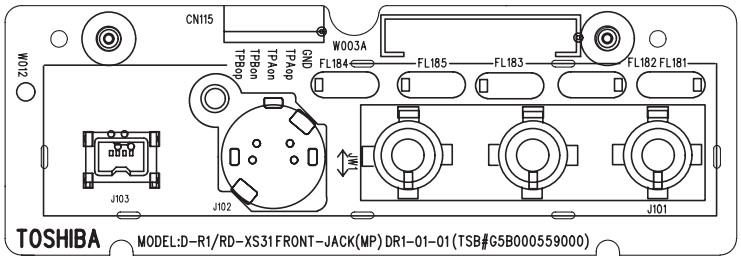


Fig. 3-5-5 EU55 Front (Jack) PC Board (Top side)

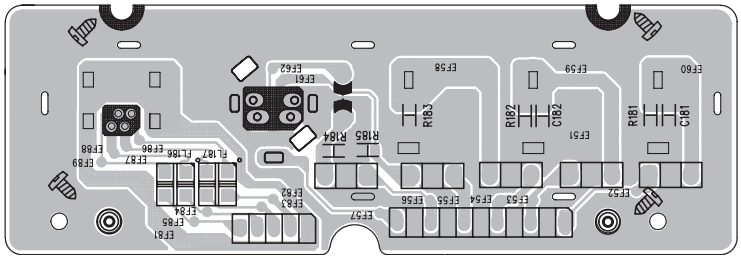


Fig. 3-5-6 EU55 Front (Jack) PC Board (Bottom side)

5-4. Digital PC Board

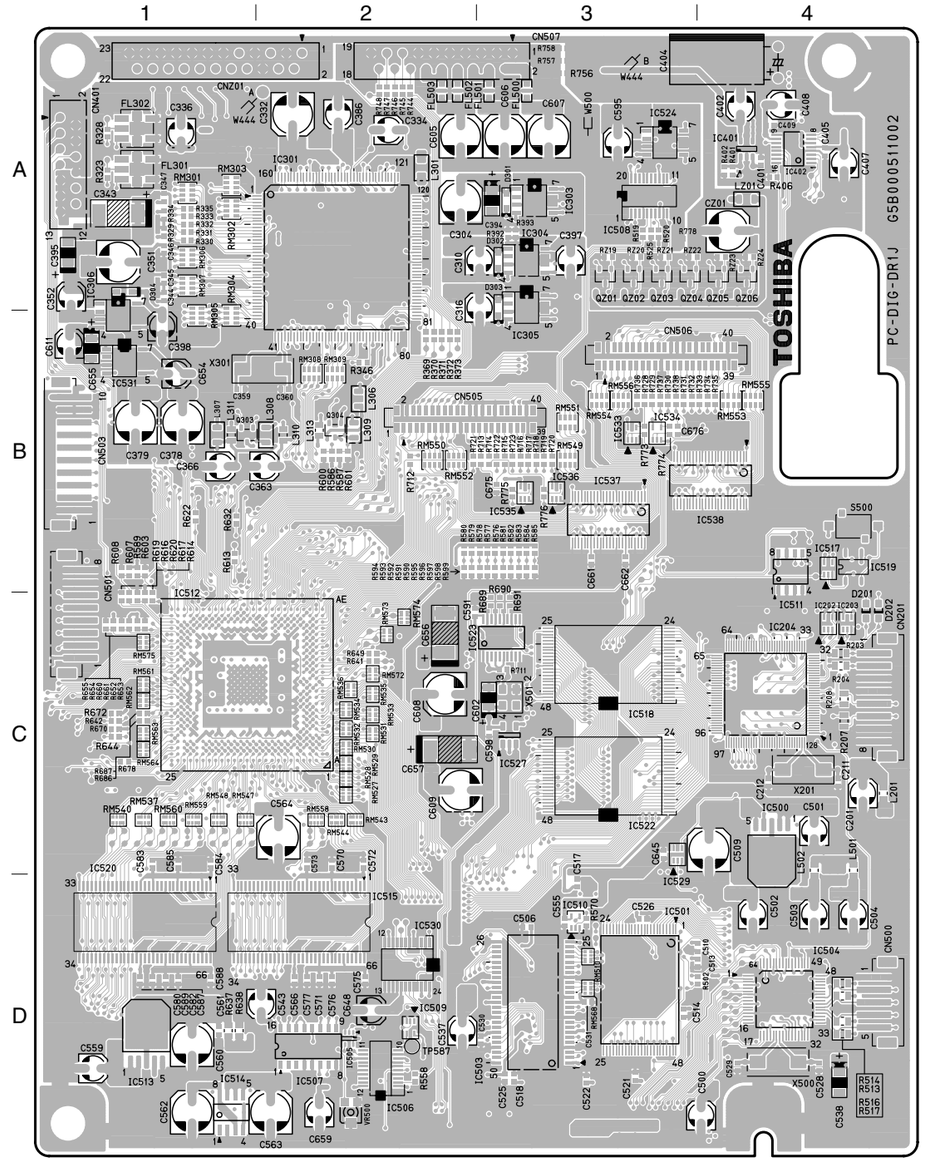


Fig. 3-5-7 EU01 Digital PC Board (Top side)

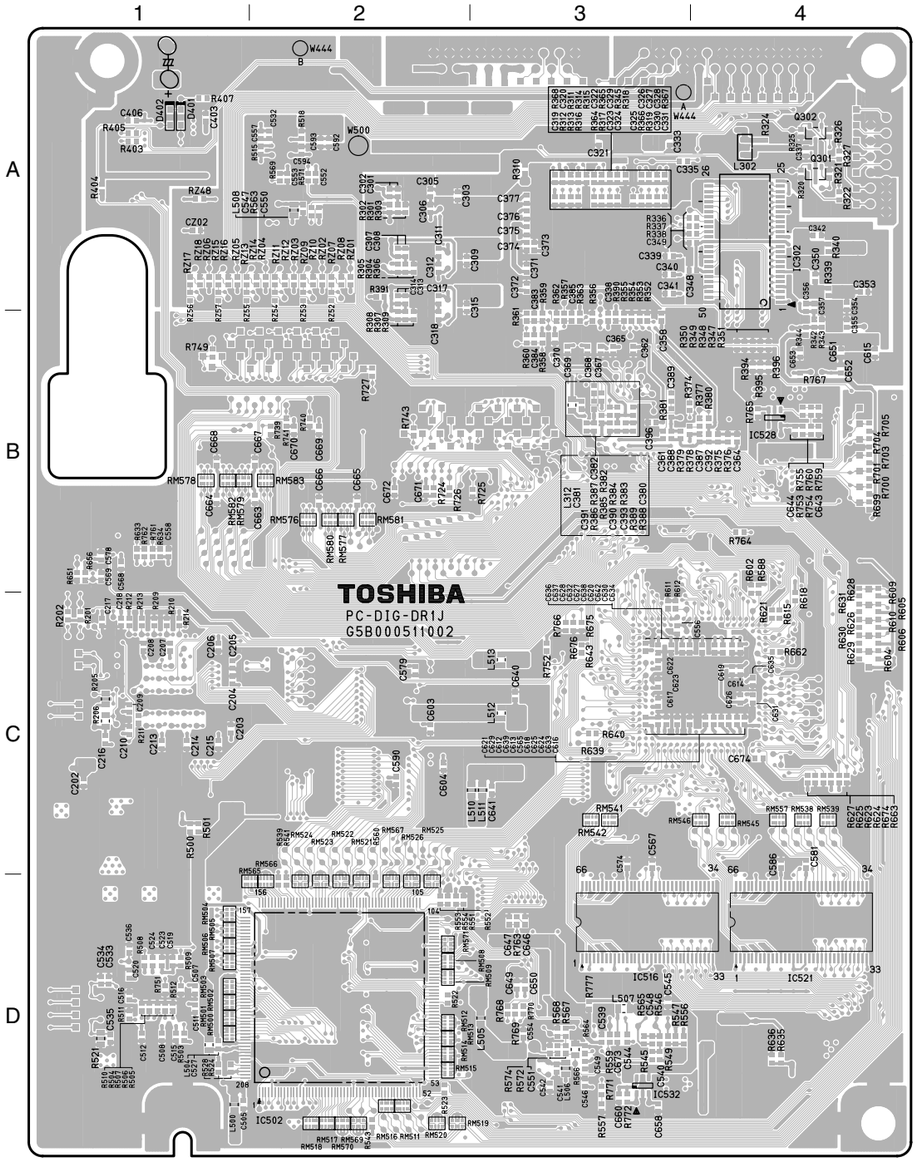


Fig. 3-5-8 EU01 Digital PC Board (Bottom side)

5-5. Mother PC Board

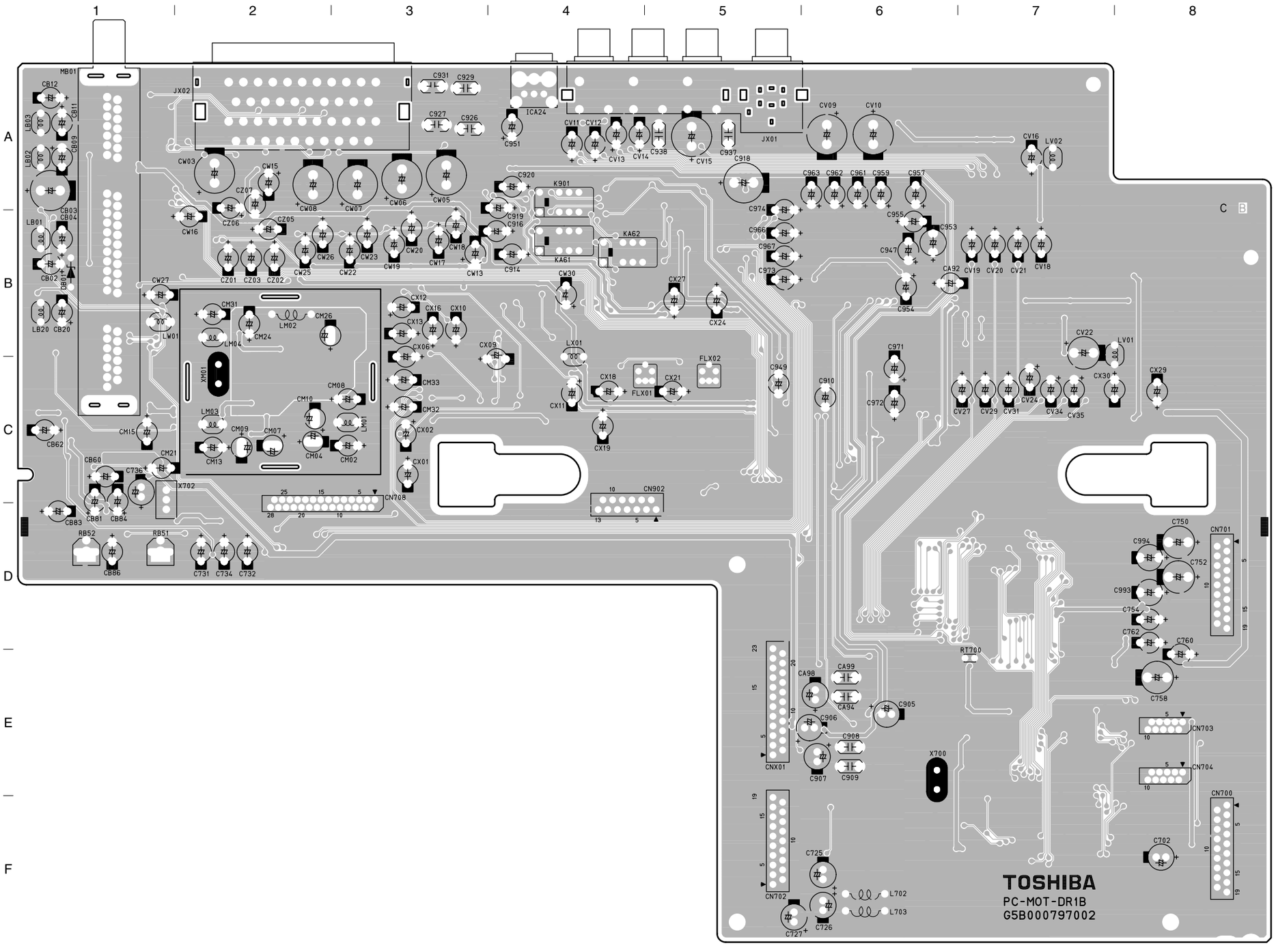


Fig. 3-5-9 EU05 Mother PC Board (Top side)

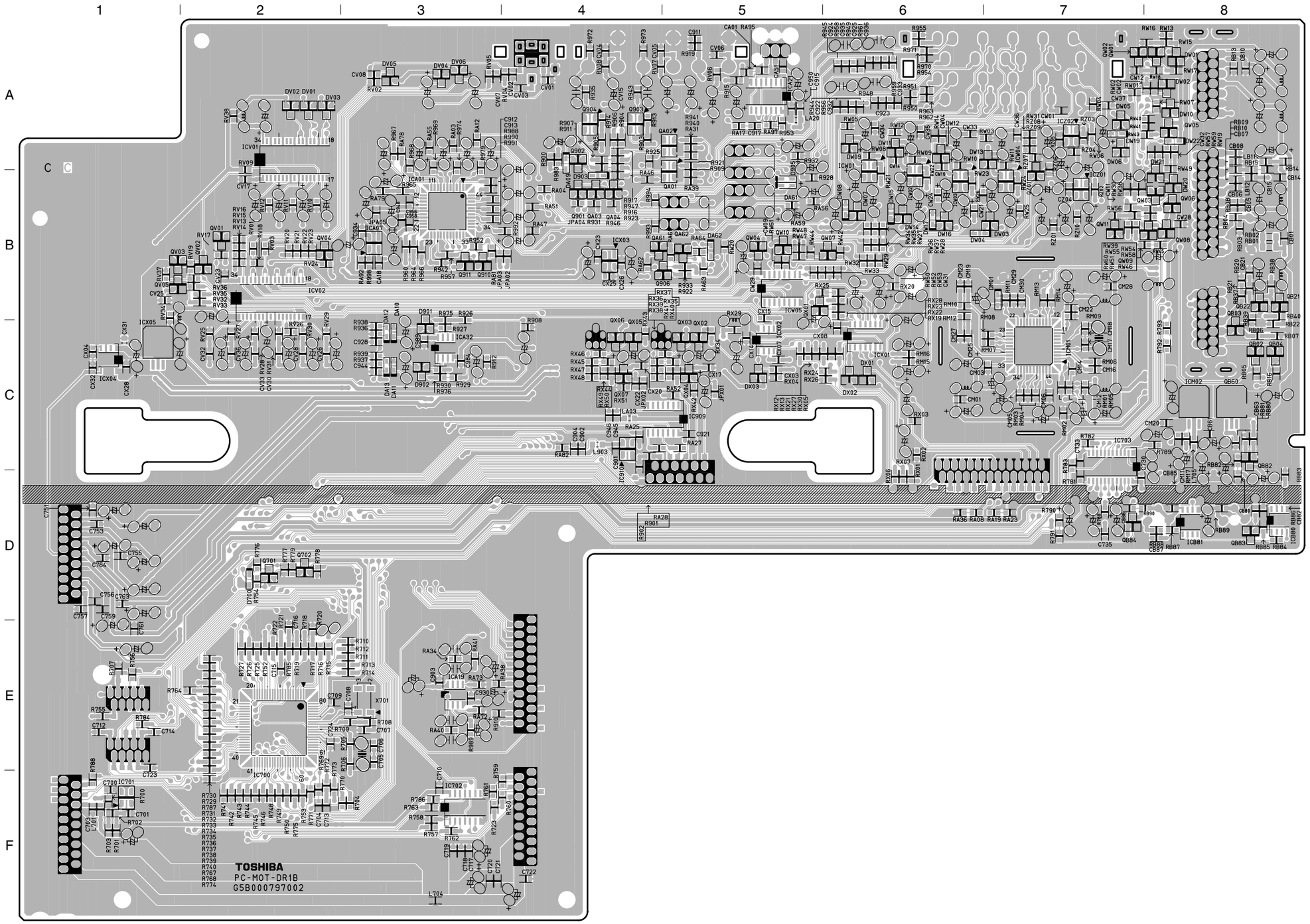


Fig. 3-5-10 EU05 Mother PC Board (Bottom side)

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